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The Administrative Record Staff

QUARTERLY

UPDATE

FOR JULY 1, 1993 THROUGH OCTOBER 1, 1993

HISTORICAL RELEASE REPORT (HRR)

PREPARED BY

**ENVIRONMENTAL RESTORATION
FACILITIES OPERATIONS MANAGEMENT**

EG&G ROCKY FLATS, INC.

**DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE**

October 29, 1993

ADMIN RECORD

A-SW-000910

**Historical Release Report (HRR)
Quarterly Report Submittal
July 1, 1993 - October 1, 1993**

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Historical Release Report (HRR)
Quarterly Report Submittal
July 1, 1993 - October 1, 1993

October 29, 1993

PREFACE

The enclosed Historical Release Report (HRR) quarterly update complies with section I.B.3 of the Interagency Agreement (IAG).

Information making up this update process consists of an assessment of newly identified areas of known, suspect, and potential environmental releases or discoveries at the Rocky Flats Plant (RFP).

Newly identified areas of concern undergo review by the Environmental Protection Agency (EPA), Colorado Dept. of Health (CDH), and the Department of Energy (DOE). Upon final review, EPA and CDH will determine if further investigation for these areas or incidents is warranted. This update process shall incorporate pertinent correspondence letters (when available) identifying what actions and/or recommendations have been made. Additionally, this format includes all Rocky Flats Hazardous Substance Release Reports (HSRR's), and Contingency Plan Implementation Reports (CPIR's) available for this reporting period.

Information submitted in this update is formatted in the same reporting style as that of the original HRR dated June 1992. Two reportable findings or incidents have been assigned Potential Area of Concern (PAC) reference numbers for this report.

We are preparing to incorporate all of the Quarterly Updates submitted to your offices to date into a second revision of the HRR by January 31, 1993. The second revision will address original comments to the first version and include updated environmental maps and other information. We look forward to your review and recommendations for which you feel the submitted information may warrant further investigation.

Finally, we will be contacting your offices within several weeks to arrange a meeting where we can discuss upcoming issues to this reporting process.

removed, and the sump cleaned.⁷ The liquid pumped from the sump was transferred to a polyliner, and Liquid Waste Operations, Building 374, picked up the liquid waste. The sludge was transferred on May 25, 1992 into poly bottles which were placed into a rigid liner and then into a white 55 gallon drum. The sludge was placed into 2 drums and transferred to the 90 day accumulation area in Building 865. The sludge was to be treated in the bottle box in Building 774.²

As of October 28, 1993, Building 889 operations had ceased, and Building 865 was undergoing transition, generating excess chemical waste. Secondary containment for the tanks in Building 866 has been provided for by adequate epoxy sealing of the two foot curb surrounding the tanks as well as the floor and walls of the building. The sump has been sealed off from the activities of the building with a steel plate which has a glass window in place to monitor water levels in the sump pit.⁸

Fate of Constituents Released to Environment

Because the area lies within already defined PAC 800-1204, which has been reviewed by CDH, DOE, and EPA for cleanup under normal RFI/RI, EG&G Environmental Restoration Management (ERM) recommended that no additional sampling take place until RFI/RI site investigations and site characterizations had taken place. In addition, it was determined that through visual inspections and monitoring, that the ERM and building management would be able to establish the structural integrity of the concrete vault and the possibility of contamination existing in the surrounding area.⁵

Comments

See PAC 800-1204 for additional information regarding remnant wastes as a possible source of liquid in the sump.

References

¹April 16, 1992 RCRA Contingency Plan Implementation Report No 92-005-JMK-0369-92 (attached)

²July 15, 1992 RFP Correspondence from Karen Lavorato, Waste Area Engineering, to Dana Wise, Hazardous Waste Operations, re temporary storage sludge from building 866

³April 12, 1992 RFP Correspondence from Micky Johnson, Spill Response and Reporting and P W Edrich, re courtesy call to EPA concerning implementation of RCRA Contingency Plan

⁴July 17, 1992 EG&G Correspondence from C.A Bicher and A Eden to R T Stagner re visual inspection of the 866 Sump Pit - CAB-134-92

⁵December 1, 1992. EG&G Correspondence from N S Demos to M.H. Stewart re: building 866 waste collection tanks, secondary containment, and sampling issues NSD-011-92.

⁶April 15, 1992. Analytical Report for Building 866 Sump.

⁷May 28, 1992. Compliance Status of Building 866 Tank Systems. Prepared by J.F. Ross.

⁸October 28, 1993. Phone interview with Fred White by Flank Blaha.

931-082 000
(B \RF5\HRR866)

PAC REFERENCE NUMBER: 000-503

IHSS Number: Not Applicable
Unit Name: Modular Tanks and Building 910 Treatment System
Approx. Location: N751,750,E2,084,500

Date(s) of Operation or Occurrence

The incident occurred on July 20, 1993, sometime after a 10:30 a.m. inspection of the subject system and before 1:00 p.m. when Building 910 operators first noticed signs of the occurrence.

Description of Operation or Occurrence

Hazardous waste from the Temporary Modular Tanks which store liquid collected by the Solar Evaporation Ponds Interceptor Trench System (ITS) was being pumped to Building 910 for treatment. Approximately 4700 gallons of hazardous waste in the primary containment piping (see the attached figure, item [64]), located between the modular tanks and the ITS sump, began leaking into the secondary containment. This waste overflowed back into the modular tank pumphouse (item [63] on figure) due to system design. This waste was fully contained in the pumphouse secondary containment. When the liquid level in the pumphouse secondary containment rose, the local alarm was activated and the pumps automatically shut down. This alerted the Building 910 operators to the spill occurrence. When the building operators found that liquid was still siphoning out through the pump, they closed the manual valves.

Some of the hazardous waste also gravity-drained through a failed hose connection on the secondary containment piping (item [a2] on figure) located within the ITS sump. The ITS sump is equipped with automatic level controls which caused this spilled material to be pumped back into the modular tanks.

Physical/Chemical Description of Constituents Released

The released material is considered RCRA F-listed hazardous waste based on 6 CCR 1007-3 because it passes through the ITS sump (which is considered a waste generation point). Applicable EPA waste codes for the released material include F001, F002, F003, F005, F006, F007 and F009. Table 1 provides a summary of the RCRA constituents generally existing in the ITS system.

TABLE 1
SUMMARY OF STATISTICS FOR STATION SW095
1991-1992

Constituent	Number of Samples	Number of Detects	mean MG/L	Regulatory Limit (MG/L)	Estimated Amount Released (lb)
TOTAL METALS ¹					
Cadmium	24	0	.00184 ²	1.0 ²	0 000074
Chromium	26	8	.00984	5 0 ²	0.000394
Lead	28	2	.00123	5.0 ²	0.000049
Silver	22	2	00393	5 0 ²	0 000157
ORGANICS.					
Methylene Chloride	25	0	.00230 ³	0 44 ⁴	0 000092
Carbon Tetrachloride	25	1	.00258	0.057 ⁴	0.000103
Chloroform	25	0	.00192 ³	0.046 ⁴	0.000076
Tetrachloroethene	25	0	.00250 ³	0 056 ⁴	0 000100
Toluene	25	0	.00250 ³	0.080 ⁴	0.000100
Trichloroethene	25	2	.00302	0 054 ⁴	0 000121
PLATING SUBSTANCES					
Cyanide	25	1	01000	1 2-1,9 ⁴	0 000400
Nickel	25	2	01042	0 040 ⁴	0 000417

¹Concentration of metals below characteristic regulatory limit therefore, water is not regulated characteristic waste

²TCLP maximum concentration of contaminants for toxicity characteristic

³Mean calculated using half the detection limit for concentrations at the detection limit

⁴Land Disposal Restricted Constituent Concentration treatment standard levels in wastewater (reference §268 43)

Responses to Operation or Occurrence

The hazardous waste that overflowed into the modular tank pumphouse was pumped into a portable tank and trucked to Building 374 for treatment. The wipes used in the final cleanup of the pumphouse were designated hazardous waste and were placed into drums stored in a RCRA satellite accumulation area.

Various actions were scheduled to be performed by August 17, 1993 to operate the system in accordance with RCRA requirements. These actions include

- 1 Repair the primary transfer pipeline
2. Modify the secondary containment of the portion of the line within the ITS sump to prevent leakage of water back into the sump. Although the portion of the line can be visually inspected, it is preferable to modify the secondary containment in this manner
- 3 Retest the line following repair.
- 4 Complete or repair the installation of leak-detectors in the secondary containment portion of the line that were not operational at the time of the incident
- 5 Confirm that the process control logic supports positive shut-down of the pumps when a leak is detected in the secondary containment system in the ITS sump.
- 6 Repair the remote alarm which was not operable when the liquid (waste) was released into the pumphouse
- 7 Analyze pressure conditions in the Building 910 feed system to determine if components experienced an over-pressurization (repair as needed)
- 8 Incorporate pressure-surge control as needed to ensure "hammer-free" operation when the liquid discharge is intermittently secured by automatically operating feed valves in Building 910

Fate of Constituents Released to Environment

No known constituents were released to the environment from this occurrence. Because the concrete sump which received the waste is unlined, the RCRA contingency plan was implemented as a precautionary measure.

Comments

References

As enclosed:

August 2, 1993. RCRA Contingency Plan Implementation Report No. 93-007-TGH460-93

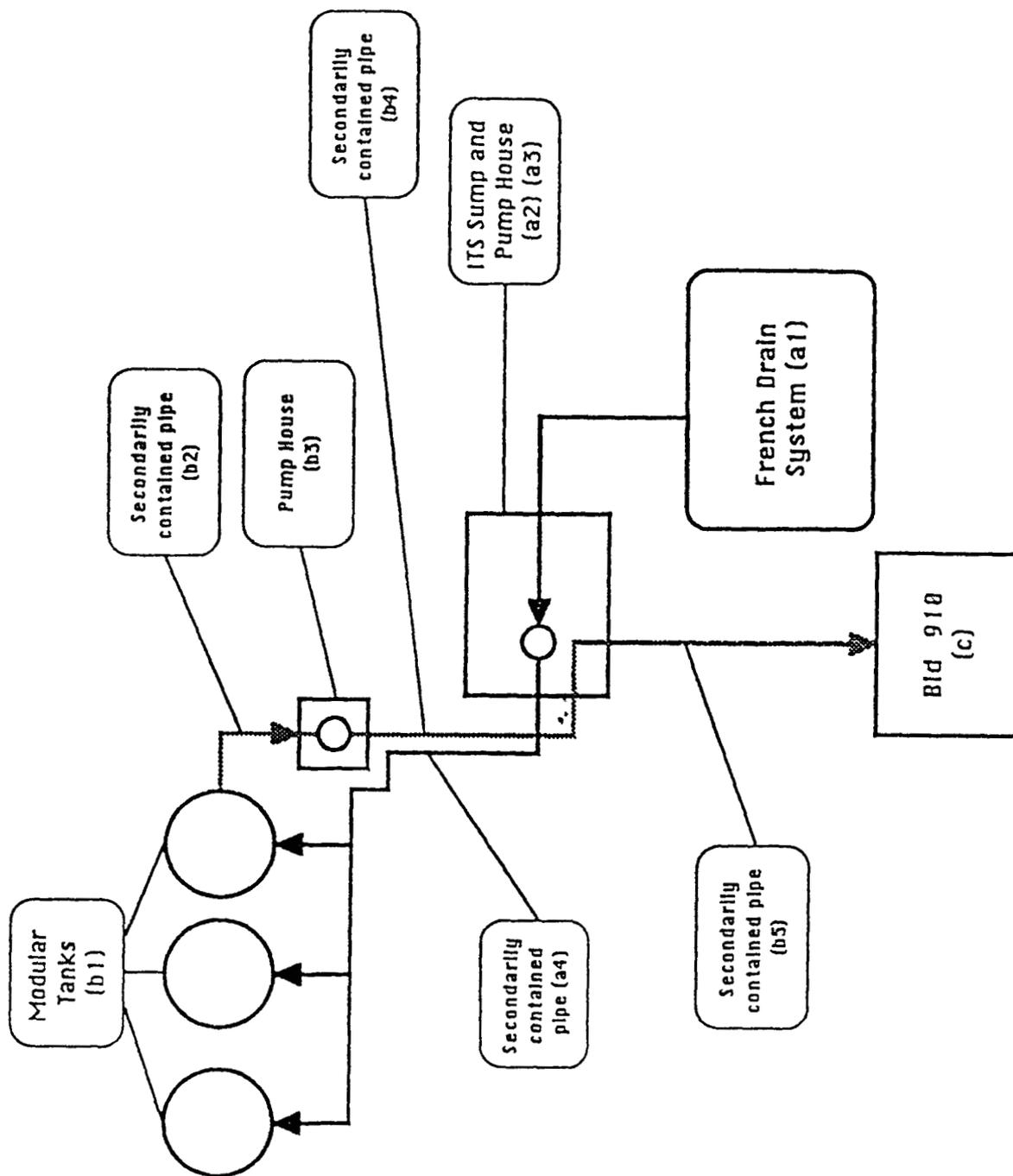
August 4, 1993 RCRA Contingency Plan Implementation Report No. 93-007-TGH472-93

August 9, 1993. Backup Data Report for RCRA Contingency Plan Implementation Report
No 93-007-TGH-461-93

931-082 000

(B VRF5\HRR10 28)

ITS System



**REFERENCES
AND
ATTACHMENTS**

CORRES CONTROL
OUTGOING LTR NO

EG&G ROCKY FLATS

RF 4355

EG&G ROCKY FLATS, INC
ROCKY FLATS PLANT, P O BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

April 16, 1992

92-RF-4355

DIST	LTR	ENC
BENJAMIN, A		
BERMAN, H S		
BRANCH, D B		
BURLINGAME, A H		
CARNIVAL G J		
COPP R D		
CROUCHER D W		
DAVIS J G		
EVERED, J E	X	X
FERRERA, D W		
GOODWIN, R		
HANNI, B J		
HARMAN, I K		
HEALY, T J		
HILBIG, J G		
IDEKER, E H		
KERSH J M	X	X
KIRBY W A		
KUESTER, A W		
KRIEG, D		
LEE, E M	X	X
MAJESTIC J R		
MARX G E		
MCDONALD M M		
MORGAN R V	X	X
POTTER, G L	X	X
PIZZITO V M		
SANDLIN N B		
SHEPLER R I		
SULLIVAN, M T		
NSON E R		
AN, K G		
JS		
NSON R B		
NSON J M		
YOUNG E R		
ZANE J O		
WILSON, M	X	X
ALLEN, E F	X	X
ROBERTS, C	X	X
SMITH, A	X	X
EVANS, N	X	X
WILSON, E	X	X
WILSON, M	X	X
WILSON, J	X	X
WILSON, A	X	X
WILSON, D	X	X
LYON, T	X	X
STUBBLE, R	X	X
CORRES CONTROL	X	X
TRAFFIC		

Robert M. Nelson, Jr.
Manager
DOE, RFO

Attn J Dion

CONTINGENCY PLAN IMPLEMENTATION REPORT NO 92-005 - JMK-0369-92

Enclosed is a proposed letter to the Colorado Department of Health (CDH) which transmits Resource Conservation and Recovery Act (RCRA) Contingency Plan Implementation Report No 92-005, also enclosed This report documents the status and information concerning the discovery of waste within a secondary containment system for Building 866 waste collection tanks (RCRA Unit Nos 40 17, 40 18, 40 19, 40 32 and 40 33) that had not been removed within 24 hours

The RCRA Contingency Plan Implementation Report should be delivered to CDH by no later than April 25, 1992. [Per 6 CCR 1007-3, Parts 264 56(j) and 265 56(j)]

If you have any questions, please contact M L Johnson at extension 5033 or K M Lavora at extension 6651


J M Kersh, Associate General Manager
Environmental and Waste Management

MLJ sf

Orig and 1 cc - R M Nelson, Jr

Enclosures

- 1) Draft letter to Frederick R Dowsett, Colorado Department of Health
- 2) RCRA Contingency Plan Implementation Report No 92-005

CLASSIFICATION

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UNCLASSIFIED	X	X
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER
SIGNATURE


4/16/92

DATE: 4/16/92
REPLY TO LTR NO: 4355

PC#
LTR APPROVALS

ORIG & TYPIST INITIALS

DRAFT

DRAFT

DRAFT

Frederick R. Dowsett, PhD , Unit Leader
Monitoring and Enforcement
Hazardous Materials and
Waste Management Division
Colorado Department of Health
4210 East 11th Avenue
Denver, Colorado 80601

Dear Dr. Dowsett:

Enclosed is Resource Conservation and Recovery Act (RCRA) Contingency Plan Implementation Report No 92-005 which documents the status and information concerning the discovery of waste within a secondary containment system for Building 866 waste collection tanks (RCRA Unit Nos 40.17, 40.18, 40.19, 40.32 and 40.33) that had not been removed within 24 hours. Your office and the Environmental Protection Agency were notified of this discovery on April 14, 1992, regarding the implementation of the contingency plan. This report is submitted in accordance with 6 CCR 1007-3, Parts 264.56(j) and 265.56(j)

If you have any questions regarding this report, please contact Thomas E. Lukow of my staff at 966-4561

Enclosure

cc w/Enclosure

M Hestmark, EPA, Region VIII
B. Brainard, DOE,RFO
C M Franklin, DOE,RFO
T E Lukow, DOE,RFO
M. L. Johnson, EG&G Rocky Flats, Inc.
J M Kersh, EG&G Rocky Flats, Inc.
K M Lavorato, EG&G Rocky Flats, Inc

RCRA CONTINGENCY PLAN
Implementation Report No. 92-005

RCRA CONTINGENCY PLAN
IMPLEMENTATION REPORT
ROCKY FLATS PLANT
EPA ID NUMBER CO7890010526

This report is made in compliance with the requirements of 6 CCR 1007-3, Parts 264.56(j) and 265.56 (j) for a written report within 15 days of the implementation of the RCRA Contingency Plan. The requirements for this are given below and will be addressed in the order listed, excerpted from 6 CCR 1007-3, Parts 264.56 and 265.56:

"(j)...Within 15 days after the incident, he must submit a written report on the incident to the department. The report must include.

- (1) Name, address, and telephone number of the owner or operator
- (2) Name, address, and telephone number of the facility
- (3) Date, time, and type of incident (fire, explosion)
- (4) Name and quantity of material(s) involved
- (5) The extent of injuries, if any
- (6) An assessment of actual or potential hazards to human health and the environment, where this is applicable; and
- (7) Estimated quantity and disposition of recovered material resulted from the incident."

- (1) Name, address and telephone number of the owner of the facility:

United States Department of Energy
Rocky Flats Plant
Post Office Box 928
Golden, Colorado 80402
(303) 966-2025

Facility Contact.
Robert M Nelson, Jr., Manager

- (2) Name, address and telephone number of the facility:

U S Department of Energy
Rock Flats Plant
Post Office Box 928
Golden, Colorado 80402
(303) 966-2025

(3) Date, time, and type of incident:

A. Description

During a walk through of Building 866 on April 8, 1992, a plant engineer identified the lack of adequate epoxy coating of the concrete sump pit within the secondary containment system for the waste collection tanks (RCRA Unit Nos. 40.17, 40.18, 40.19, 40.32 and 40.33). Upon further investigation, it was determined that the sump pit also contained approximately six inches of liquid. The source of the liquid was presumed to be mop water.

B. Corrective Action

All waste shipments to the tanks in Building 866 were ceased. The waste collection tanks were emptied. The liquid (approximately 20-30 gallons) was pumped from the pit and placed into a polyliner awaiting analysis. The sludge was left in the pit until a work package could be developed and approved by safety personnel. The tank system will remain out of service until the secondary containment system has been upgraded.

A sample of the liquid was taken and analyzed to verify that the liquid was mop water. The sample was analyzed on April 10, 1992. The analytical results indicate that the liquid contains Beryllium (4 to 5 ppm) and radioactive contamination (800 pCi/L gross alpha and 500 pCi/L gross beta); therefore, the source of the contaminants was most likely from the tank system. There is no physical evidence that the liquid collected within the sump pit was a result of leak from the tanks or auxiliary equipment.

(4) Name and quantity of material involved:

Based on analytical results, the liquid in sump pit is process waste generated in Buildings 865 or 889 and shipped to the waste collection tanks in Building 866. The pit contained approximately 35 gallons of liquid and sludge. The liquid has been transferred to a polyliner and will be treated in Building 374. The sludge will be packaged in accordance with RFP procedures and will be managed in accordance with all interim status requirements and permits.

(5) Extent of injuries:

There were no injuries to personnel.

(6) An assessment of actual or potential threat to human health and the environment:

A visual assessment of condition of the sump pit will be completed upon removal of the sludge. If the results of this assessment indicate that there was a potential release to the environment, a recommendation will be made to identify the area surrounding Building 866 as a "potential area of concern" to be included in the next revision to the Historical Release Report.

- (7) Estimate quantity and disposition of recovered material that resulted from the incident:

All materials will be packaged, marked and stored in accordance with RCRA regulatory requirements and Rocky Flats procedures. Twenty to thirty gallons of liquids and five to seven gallons of sludge were generated.

RF 9391, EG&G ROCKY FLATS

EG&G ROCKY FLATS, INC
ROCKY FLATS PLANT, P O BOX 464, GOLDEN, COLORADO 80402-0464 (303) 966 7000

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PP RD		
7IS JG		
RICH, P W	X	X
TRERA D W		
ROST L A	X	X
VNI BJ		
RIAN L.R.		
ALY TJ		
DAHL T G	X	X
BRG, JG		
BY W.A.		
ESTER, A W		
NN HP		
RTINEZ, A	X	X
RX G E		
DONALD, M.M.		
KENNA F G		
INTROSE J.K		
JRGAN R V	X	X
ZUTO, V.M		
JTTER G.L.	X	X
LEY JH		
SING T L	X	X
NDLIN N H		
JRUBERT A L	X	X
ETLOCK G H	X	X
PEPLER R L		
EWART D L		
JCLIVAN M T		
JN E H		
JN H B		
JN J M.		
JAVE JO		
JRRET J	X	X
JHNSON, M L	X	X
JENN R P	X	X
JONLE R W	X	X
JONSON K C	X	X
JORDA J A	X	X
JRSEN P J	X	X
JENAS N	X	X
JONE P		
JORRES CTR L	X	X

August 2, 1993

93-RF-9391

A. H. Pauole
Acting Manger
DOE, RFO

Attn D Grosek

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) CONTINGENCY PLAN
IMPLEMENTATION REPORT (CPIR) No 93-007 - TGH-460-93

Enclosed is a draft letter to the Colorado Department of Health (CDH) to transmit RCRA CPIR No 93-007, also enclosed. The report outlines the events and response actions associated with a spill of approximately 4,700 gallons of hazardous waste from the ancillary equipment associated with the Temporary Modular Tanks and Building 910 Treatment System. These tanks store liquid that is collected by the Solar Evaporation Pond Interceptor Trench System (ITS). The tanks, treatment system, and ancillary equipment are a part of RCRA Unit No 38. The RCRA Contingency Plan was implemented as a precautionary measure due to the possibility of a release of RCRA regulated hazardous waste to the environment.

This report was developed to meet the RCRA Contingency Plan reporting requirements of CCR 1007-3 Section 265 56(j) as well as the notification requirements of 6 CCR 1007-3 Section 265 56(i) and the tank system release reporting requirements of CCR 1007-3 Section 265 196(d). This report should be delivered to CDH no later than August 4, 1993, as required by 6 CCR 1007-3 Section 265 56(j).

If you have any questions regarding this subject, please contact either R. W. Bovie at 966-6926 or M. L. Jonnson at 966-5030.

CLASSIFICATION

UNCLASSIFIED	X	X
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER

SIGNATURE
J. V. Louversun
7/30/93

REPLY TO RFP CC NO

ACTION ITEM STATUS

Partial/Open

TR APPROVALS

ORIG & TYPST INITIALS
MLJ AAF

Tom Hedani
T. G. Hedani, Associate General Manager
Environmental and Waste Management

MLJ aaf

Orig and 1 cc - A. H. Pauole

Enclosures
As Stated (2)

DRAFT

DRAFT

DRAFT

Colorado Department of Health
Hazardous Materials and Waste Management Division
Mail Code HMWMD-HWC-B2/Attn Frederick R Dowsett, PhD
4300 Cherry Creek Drive South
Denver, Colorado 80601-1530

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) CONTINGENCY PLAN
IMPLEMENTATION REPORT (CPIR) No 93-007

Enclosed is the RCRA CPIR No 93-007 which outlines the events and responses associated with a spill of approximately 4,700 gallons of hazardous waste from the ancillary equipment associated with the Temporary Modular Tanks and Building 910 Treatment System. These tanks store liquid that is collected by the Solar Evaporation Pond Interceptor Trench System (ITS). The tanks, treatment system, and ancillary equipment are a part of RCRA Unit No 38. The RCRA Contingency Plan was implemented as a precautionary measure due to the possibility of a release of RCRA regulated hazardous waste to the environment.

This report was developed to meet the RCRA Contingency Plan reporting requirements of CCR 1007-3 Section 265 56(j) as well as the notification requirements of 6 CCR 1007-3 Section 265 56(i) and the tank system release reporting requirements of CCR 1007-3 Section 265 196(d).

Your office was notified of the incident on July 21, 1993 at 10 15 a m that the RCRA Contingency Plan has been implemented as a precautionary measure due to the possibility of a release of RCRA regulated hazardous waste to the environment. The EPA, Region VIII was notified by facsimile on July 21, 1993. If you have any questions regarding this subject, please contact R W Boyle of EG&G Rocky Flats Inc at 966-6926.

Enclosure
As Stated

cc

D M Maxwell - EPA, Region VIII
B Brainard - DOE, RFO
D Grosek - DOE, RFO
T E Lukow - DOE, RFO
W E Seyfert - DOE RFO
R W Boyle - EG&G Rocky Flats, Inc
T G Hedahl - EG&G Rocky Flats, Inc
M L Johnson - EG&G Rocky Flats Inc
P J Larsen - ET&T Rocky Flats Inc
A L Schnibert - EG&G Rocky Flats, Inc

RCRA CONTINGENCY PLAN
 IMPLEMENTATION REPORT No. 93-007
 ROCKY FLATS PLANT
 EPA ID NUMBER CO7890010526

This report is made in compliance with the requirements of 6 CCR 1007-3, Parts 264.56 (j) and 265.56 (j) for a written report within 15 days of the implementation of the RCRA Contingency Plan. The requirements for this are given below and will be addressed in the order listed, excerpted from 6 CCR 1007-3, Parts 264.56 and 265.56

"(j) .Within 15 days after the incident, he must submit a written report on the incident to the department. The report must include

- (1) Name, address, and telephone number of the owner or operator
- (2) Name, address, and telephone number of the facility
- (3) Date, time, and type of incident (fire, explosion)
- (4) Name and quantity of material(s) involved
- (5) The extent of injuries, if any
- (6) An assessment of actual or potential hazards to human health and the environment, where this is applicable, and
- (7) Estimated quantity and disposition of recovered material resulted from the incident "

In addition, information is also being included in this report to address the reporting and notification requirements of 6 CCR 1007-3 Section 265.56(i) and CCR 1007-3 Section 265.196(d)

- (8) Notification requirements of 6 CCR 1007-3 Section 265.56(i)
- (9) Tank system release reporting requirements of CCR 1007-3 Section 265.196(d)

- (1) NAME, ADDRESS AND TELEPHONE NUMBER OF THE OWNER OF THE FACILITY

United States Department of Energy
 Rocky Flats Plant
 Post Office Box 928
 Golden, Colorado 80402
 (303) 966-2025

Facility Contact
 A. H. Pauole, Manager

July 30, 1993

(2) NAME, ADDRESS AND TELEPHONE NUMBER OF THE FACILITY:

U S Department of Energy
Rock Flats Plant
Post Office Box 928
Golden, Colorado 80402
(303) 966-2025

(3) DATE, TIME, AND TYPE OF INCIDENT:

A. Summary:

A hazardous waste incident occurred on July 20, 1993. The incident involved the Interceptor Trench (ITS) and ancillary equipment associated with the Modular Tanks and Building 910 Treatment System (RCRA Unit No. 38). The incident involved a failure of a primary pipe and secondary containment system and resulted in a spill/leak of hazardous waste. The incident was discovered at approximately 1 30 p m. Hazardous waste was being pumped from the Modular Tanks to the Building 910 treatment facility when a primary transfer pipe failed, causing waste to leak/ spill into the secondary containment pipe. The released material filled the secondary containment pipe causing hazardous waste to spill from the secondary containment pipe into the modular tank pumphouse secondary containment. In addition, the excessive amount of waste in the transfer piping secondary containment caused a hose connection on the secondary containment pipe to fail and resulted in a leak of hazardous waste into the ITS sump.

The contingency plan was implemented on July 20, 1993 as a precautionary measure, due to a possibility of a release to the environment of hazardous waste from an unlined concrete sump (the ITS sump). In addition, some of the released material was not removed from the secondary containment of the transfer piping within 24 hours.

B System Description

The involved system is a collection, transport, storage, and treatment system used to manage surface/ ground water at the northeast portion of the RFP site. The ITS and its predecessor trench systems were installed to collect and return ground water to the Solar Ponds for treatment to remove nitrates (reference Historical Release Report for the Rocky Flats Plant, June, 1992). The nitrate level continues to exceed applicable stream standards for Walnut Creek.

The system is an Interim Status unit, permitted through the mechanism of the Interim Measure/Interim Remedial Action (IM/IRA). (The IM/IRA Decision Document for the Solar Evaporation Ponds Operable Unit No. 4, April, 1992 states on page 1-1 "this IM/IRA is a mechanism for permitting the use of the proposed treatment (i.e., use of surge tanks and flash evaporators) as directed by EPA and CDH." Subsequently, at CDH request (Baughman to Hartman, September 2,

July 30, 1993

1992), a revised Part A permit application was submitted which covers the tanks and flash evaporators.)

The system includes a) Interceptor Trench System (ITS), b) three (3) Modular Storage Tanks, c) Building 910 Treatment System, and all related ancillary equipment. Figure 1 is a system layout and Figure 2 is a schematic of the transfer systems. The following is a description of the system components.

a) Interceptor Trench System (ITS).

- 1) The ITS system includes an extensive French Drain system of perforated pipes that collects and transports surface and ground water to the ITS sump (reference Figure 2 - item a1).
- 2) The ITS sump is an underground, unlined, concrete vault that stores the surface and ground water (reference Figure 2 - item a2). The ITS sump is not secondarily contained.
- 3) A small building housing two pumps is located on top of the sump (reference Figure 2 - item a3). The submersible sump pumps transfer the surface and ground water collected in the sump several hundred feet to the modular storage tanks. In accordance with 6 CCR 1007-3, the pumping operation is considered a waste generation point. At this point, the generated waste (pumped surface/ ground water) is characterized as RCRA hazardous waste.

NOTE: The ITS pumphouse is the physical low point of the transfer systems for both the pipeline from the ITS sump to the Modular Tanks (reference Figure 2 - item a4) and the pipeline from the Modular Tanks pumphouse to Building 910 (reference Figure 2 - item b4 and b5).

- 4) The RCRA hazardous waste (pumped surface/ ground water) is pumped from the ITS sump pump, through a 3-inch secondarily contained, buried pipe, several hundred feet to one of 3 modular storage tanks (reference Figure 2 - item a4).

b) Modular Storage Tanks

- 1) The hazardous waste (pumped surface/ ground water) is stored in three modular storage tanks (reference Figure 2 - item b1) until it is pumped to the Building 910 treatment system.
- 2) A secondarily contained, buried pipe (reference Figure 2 - item b2) transports waste from the modular tanks to the modular storage tank pumphouse (reference Figure 2 - item b3).
- 3) A pumphouse (reference Figure 2 - item b3) is located several feet from

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the storage tanks and contains two pumps that transfer the waste from the modular storage tanks to the Building 910 treatment system. The pumphouse includes a epoxy-coated steel secondary containment with an automatic feed cutoff that shuts down the pumps when a high level is reached in the pumphouse secondary containment. The leak detection system includes a local and remote alarm. The secondary containment for the transfer pipe from the tanks to the pumps is open ended (daylights) in the modular tank pumphouse.

- 4) The waste is pumped through 2-inch secondarily contained, buried pipe (reference Figure 2 - items b4 and b5) several hundred feet from the modular tank pumphouse through the ITS sump (reference Figure 2 - item a2) and to the Building 910 treatment system (reference Figure 2 - item c). The primary containment pipe is continuous and does not open to or stop at the ITS sump. The secondary containment piping is divided into two sections to allow segregation and identification if a leak should occur. The partition between the two sections of secondary containment is located within the ITS sump. The automatic leak detection system for these two sections of secondary containment was not operational, therefore, daily inspections were being conducted until the automatic system could be made operational. The pipeline from the modular tank pumphouse to Building 910 (reference Figure 2 - item b4) shares a common trench with the pipeline from the ITS sump to the modular storage tank (reference Figure 2 - item a4)
- 5) From the ITS sump, the continuous pipe (and secondary containment around the pipe) goes to the building 910 Treatment System (reference Figure 2 - item c). From ITS sump (reference Figure 2 - item a2), the transfer pipe continues by itself to the Building 910 treatment facility (reference Figure 2 - item c)

c) Building 910 Treatment Facility

- 1) The Building 910 treatment facility (reference Figure 2 - item c) includes storage tanks and three evaporative units that treats the waste (pumped surface/ ground water)

C Description of Incident and Immediate Response

Hazardous waste from the Temporary Modular Tanks, which stores liquid collected by the Solar Evaporation Ponds Interceptor Trench System (ITS), was being pumped to Building 910 for treatment in the Acceptance Phase of the building's operation. At approximately 10:30 a.m. on July 20, 1993, operators conducted the daily inspection of the tank system which includes the ITS sump and Modular Tank pumphouse. No problems or unusual conditions were identified.

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Prior to 1 00_p m on July 20, 1993, a leak occurred in the primary containment piping (reference Figure 2 - item (b4)) located between the modular tanks and the ITS sump (reference Figure 2 - item a2) which allowed waste to leak into the secondary containment. Due to the location of the leak in the pipeline, the hazardous waste that leaked into the secondary containment overflowed back into the Modular Tank pumphouse (reference Figure 2 - item b3) and also gravity-drained through a failed hose connection on the secondary containment piping (reference Figure 2 - item a2). The failed hose connection is located within the ITS sump. The ITS sump is equipped with an automatic level controls and the material that spilled into the ITS sump was pumped back into the Modular Tanks. The hazardous waste that overflowed into the Modular Tank pumphouse was fully contained in the pumphouse secondary containment. When the liquid level in the pumphouse secondary containment rose, the leak detection system was activated, the local alarm was activated, and the pumps were automatically shut down. The remote alarm via telemetry to Building 374 did not, however, function. Problems had occurred previously and this alarm was not reliable; therefore, it had not been considered operational and compensatory measures were in place to perform daily checks of the local alarm panel. This deficiency had been identified as an open item to be corrected.

At approximately 1 00 p m., Operators in Building 910 were alerted to a problem when feed from the Modular Tanks ceased flowing to Building 910. The operators investigated (at approximately 1 30 p m) and discovered that the pump had automatically shut-down due to liquid on the floor of the pumphouse. Liquid was apparently still siphoning out through the pump, therefore, the operators immediately stopped the flow of hazardous waste by closing manual valves.

D Corrective Action

Applicable requirements of 6 CCR 1007-3 Part 264 196 will be met prior to system restart.

- 1) In accordance with 6 CCR 1007-3 Part 264 196 (a) - Cessation of Use. The pump automatically shut-down when the liquid level in the pumphouse reached the level sensor. Operators observed some siphoning of liquid through the pump, and immediately closed the manual valves to isolate the line and stop the flow of hazardous waste. While verifying the cause of the problem, the pump was operated for a short duration (less than one minute) to confirm the location of the leak. The pumps and valves were locked out/tagged out at 9 30 p m on July 20 to prevent any addition of hazardous waste to the transfer pipe.

NOTE. The ITS is continuing to collect ground water into the sump, and that ground water was pumped to the Modular Tanks as needed. These sump operations are routine, automatic, and continuous.

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- 2) In accordance with 6 CCR 1007-3 Part 264 196 (b)(2) - Removal of hazardous waste from the secondary containment.
 - a) On July 20, the hazardous waste that had collected in the secondary containment system of the pumphouse was pumped into a liquid waste dumpster and trucked to Building 374 for treatment.
 - b) Hazardous waste continued to drain from the hose connection on the secondary containment into the ITS sump for several hours; the sump was checked several times after the problem was initially discovered at about 1:30 p.m. on July 20, and drainage from the secondary containment had ceased by 4:30 p.m. on July 20 when the transfer piping secondary containment drained to the low point of the line in the ITS sump. The material that drained into the sump was automatically pumped back into the Modular Tank system and was removed from the sump by 5:00 p.m. on July 20.
 - c) Some hazardous waste, however, remained in the annulus of the secondarily contained piping below the elevation of the disconnected hose connection. Upon completion of a work package (including a confined space permit), approximately 30 gallons of hazardous waste was drained from the annulus on July 30, 1993.
- 3) In accordance with 6 CCR 1007-3 Part 264 196 (c) - Containment of visible release to the environment. There were no visible releases to the environment. Since the ITS sump is below ground, the sump cannot be visually inspected to assure that no hazardous waste has escaped to subsurface soil or water. It is possible that hazardous waste did escape from the sump, since the sump is unlined concrete.
- 4) In accordance with 6 CCR 1007-3 Part 264 196 (d)- Notification and reports. The CDH and EPA were notified of this occurrence on July 21, 1993 as a precautionary measure due to the possibility of a release to the environment of greater than one pound of hazardous waste from the unlined concrete sump. Submission of this RCRA Contingency Implementation Report satisfies 6 CCR 1007-3 Part 264 196 (d) report requirements.
- 5) In accordance with 6 CCR 1007-3 Part 264 196 (e)(3) - Repair of the affected system. The system will be returned to service as soon as the necessary repairs are completed. The following actions will be completed prior to returning the system to operation:
 - Repair the primary transfer line,
 - Repair or modify the portion of the secondary containment of the transfer line (the hose connection) within the ITS sump that

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failed and resulted in the leak of hazardous waste from the secondary containment system, and

- Retest the primary line following the repair.

6) In accordance with 6 CCR 1007-3 Part 264.196 (f)- Certification of major repairs. The repair of the system is not expected to be extensive (per §265.196(f), examples of extensive repairs are installation of an internal liner or repair of a ruptured vessel); therefore the certification by an independent, qualified, registered, professional engineer may not be required prior to resuming operations.

E. Operational Status.

The ancillary equipment associated with the spill is currently shut down and locked out of service until the repairs to the leak in the primary and secondary systems are repaired. When the system is returned to operation, operation will be in compliance with RCRA

(4) MATERIAL INVOLVED.

As specified in 6 CCR 1007-3, ground water is not a solid waste and the "mixing" and "derived from" rules are not operable in this system. The ITS system, including the French Drain system, are not hazardous waste systems and the surface/ ground water in these systems is not characterized as hazardous waste (reference Figure 2 - item a1). The surface/ ground water stored in the ITS is not characterized as hazardous waste (reference Figure 2 - item a2).

The released material is, however, RCRA F-listed hazardous waste. In accordance with 6 CCR 1007-3, the pumping operation at the ITS sump is considered a waste generation point (reference Figure 2 - item a3). At this point (reference Figure 2 - item a3), the surface/ ground water is recharacterized as RCRA F Listed hazardous waste because the "contained in" rule is operable. The applicable EPA waste codes are F001, F002, F003, F005, F006 F007, and F009.

In accordance with 6 CCR 1007-3, the waste remains a listed hazardous waste (F001, F002, F003, F005, F006 F007, and F009) as it moves through all other parts of the system.

(5) EXTENT OF INJURIES

No injuries occurred.

(6) THREAT TO HUMAN HEALTH OR THE ENVIRONMENT.

The spill/leak did not result in an additional threat to human health or the

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environment

The Modular Tank pumphouse fully contained the hazardous waste spilled into the pumphouse secondary containment.

The unlined concrete ITS sump may have allowed a release of hazardous waste to the environment. It is possible that during normal operations, the surface/ground water could move in or out of the ITS sump, therefore, some of the hazardous waste spilled into the sump may have also permeated the concrete or otherwise escaped to the surrounding soil. The spilled hazardous waste does, however, originate in the ITS sump. There is no physical or chemical difference between the spilled hazardous waste and the surface/ground water collected in the ITS sump. The only difference in the material is that one is classified as hazardous waste and the other is classified as surface/ground water

Approximately 3 to 4 million gallons of ITS water is collected in the sump each year, and the amount of the spill represents a very small increase (less than 1%) in the volume handled in the sump. The ITS system was not designed to collect all of the ground water flowing under the ponds at the depth of the trench system and any spilled hazardous waste that leaked from the ITS sump would rejoin that ground water that currently flows from the sump.

(7) QUANTITY AND DISPOSITION

A Quantity

Approximately 4,700 gallons of hazardous waste were leaked from the pipeline secondary containment. The volume was estimated as follows:

- 1) Approximately 300 gallons of hazardous waste were spilled to the Modular Tank pumphouse secondary containment, based on the known area of the floor and the observed depth of four inches
- 2) Approximately 4,400 gallons of hazardous waste were spilled to the ITS sump. Hazardous waste from the sump was pumped to the east Modular Tank, and operators observed that the level in the tank rose less than one inch. The tank holds about 6000 gallons per inch of height. The installed flow totalizer in the ITS pumphouse indicated approximately 5,000 gallons had been pumped from the sump to the Modular Tank between 10:30 a.m. and 4:30 p.m. on July 20. Inflow from the trench system to the sump would have contributed approximately 600 gallons during this period. Thus, the estimate of 4,400 gallons was derived from this data. The hazardous waste was recovered from the sump by about 5:00 p.m. on July 20.

The original notification to CDH and EPA had estimated that 6300 gallons had leaked from the secondary containment system. The quantity has been revised.

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based on the above facts

It is estimated that less than 0.01 pound of hazardous waste constituents were leaked into the secondary containment system. This estimation is based on the spill of 4,700 gallons (about 40,000 pounds) of hazardous waste and a hazardous waste constituent concentration of 50 ppb. The contaminant concentration level is based on historical data for the ITS waste stream.

B. Disposition

The hazardous waste that overflowed into the Modular Tank pumphouse was pumped into a portable tank and trucked to Building 374 for treatment. The wipes used in the final cleanup of the pumphouse were designated as hazardous waste (mixture rule), and placed into drums and are properly stored in a RCRA satellite accumulation area in Building 910.

The hazardous waste that spilled into the ITS sump was recovered into the Modular Tanks. This recovery represents the normal, automatic functioning of the system. No change to the characteristics of the hazardous waste occurred, and the hazardous waste will be treated in existing facilities.

(8) RESUMPTION OF OPERATIONS NOTIFICATION

Based on the requirements of 6 CCR 1007-3 Part 264.56 (i), the owner or operator must notify CDH that the facility is in compliance with 6 CCR 1007-3 Part 264.56 (h) prior to resuming operations. The system is in compliance with the requirements outlined in 6 CCR 1007-3 Part 265.56(h)(1) in that all of the released material has been treated or stored. The system is also in compliance with the requirements outlined in 6 CCR 1007-3 Part 265.56(h)(2) in that only incidental release supplies used to respond to this incident were from routine operations supplies and no incidental release response supplies were used. In addition, no equipment specifically listed in the contingency plan were used to respond to this incident.

(9) TANK RELEASE REPORTING REQUIREMENTS

Based on the requirements of 6 CCR 1007-3 Part 264.196 (d), a report containing the following information must be submitted to CDH:

The route of migration of such a release would be into the ground water that flows to the Walnut Creek basin.

Characteristics of the surrounding soil are available in the IM/IRA.

No additional monitoring will be initiated in response to this specific incident because the area of the ITS already experiences ground water flow from under the ponds, the Operable Unit will be remediated as part of the

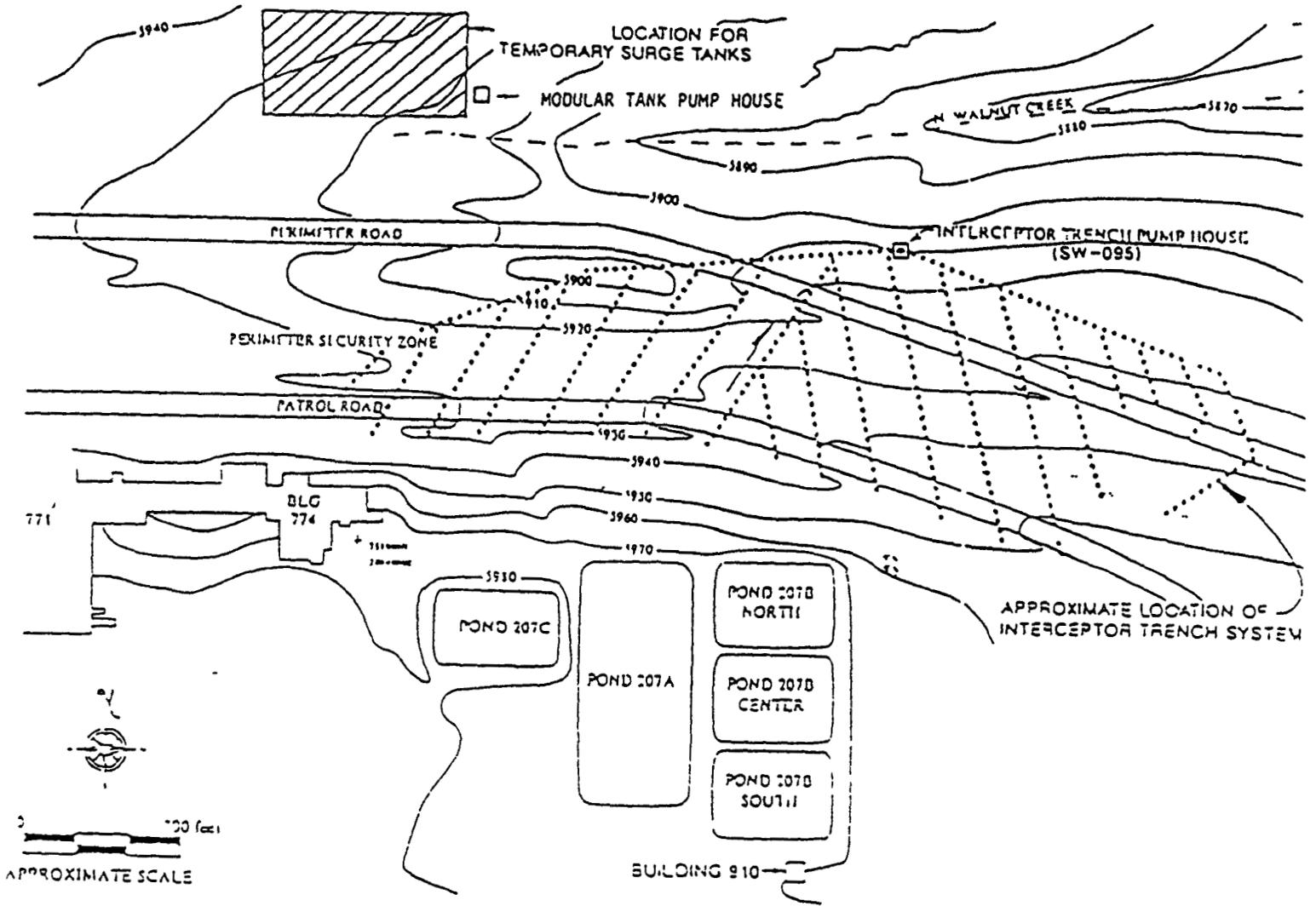
July 30, 1993

Interagency Agreement (IAG), and retention basins are operated in the Walnut Creek drainage that lead to a NPDES discharge point in Walnut Creek

Characteristics of downgradient waters and populations are available in the IM/IRA.

A description of the response action taken or planned are included in section 3 of this report

July 30, 1993



Solar Evaporation Pond Area

FIGURE 1

IIS System

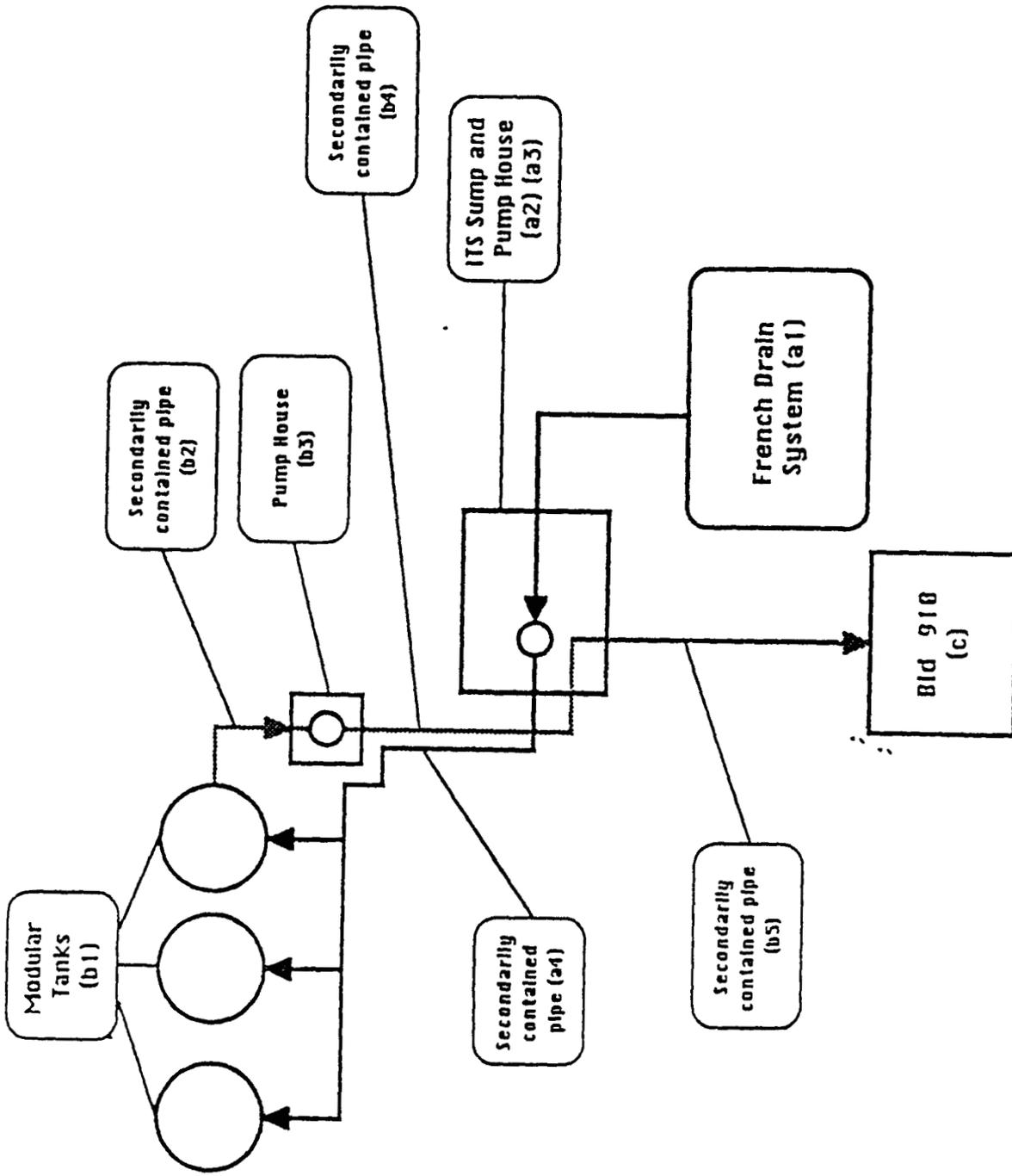


FIGURE 2

DRAFT

DRAFT

DRAFT

Colorado Department of Health
Hazardous Materials and Waste Management Division
HMWMD-HWC-B2/Frederick R Dowsett, PhD
4300 Cherry Creek Drive South
Denver, Colorado 80601

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) CONTINGENCY PLAN IMPLEMENTATION
REPORT (CPIR) NO 93-007

Enclosed is the RCRA CPIR No 93-007 which outlines the events and responses associated with a spill of approximately 4,700 gallons of hazardous waste from the ancillary equipment associated with the Temporary Modular Tanks and Building 910 Treatment System. These tanks store liquid that is collected by the Solar Evaporation Pond Interceptor Trench System (ITS). The tanks, treatment system, and ancillary equipment are a part of RCRA Unit No 38. The RCRA Contingency Plan was implemented as a precautionary measure due to the possibility of a release of RCRA regulated hazardous waste to the environment.

This report was developed to meet the RCRA Contingency Plan reporting requirements of CCR 1007-3 Section 265 56(j) as well as the notification requirements of 6 CCR 1007-3 Section 265 56(i) and the tank system release reporting requirements of CCR 1007-3 Section 265 196(d).

Your office was notified of the incident on July 21, 1993 at 10:15 a.m. that the RCRA Contingency Plan has been implemented as a precautionary measure due to the possibility of a release of RCRA regulated hazardous waste to the environment. The EPA, Region VIII was notified by facsimile on July 21, 1993. If you have any questions regarding this subject, please contact R. W. Boyle of EG&G Rocky Flats Inc. at 966-6926.

Enclosure
As Stated

cc

D. M. Maxwell - EPA, Region VIII
B. Brainard - DOE, RFO
D. Grosek - DOE, RFO
T. E. Lukow - DOE, RFO
W. E. Seyfert - DOE, RFO
R. W. Boyle - EG&G Rocky Flats, Inc
R. P. Dunn - EG&G Rocky Flats, Inc
T. G. Hedahl - EG&G Rocky Flats, Inc
M. L. Johnson - EG&G Rocky Flats, Inc
P. J. Larsen - ET&T Rocky Flats, Inc
A. L. Schubert - EG&G Rocky Flats, Inc

RCRA CONTINGENCY PLAN
IMPLEMENTATION REPORT No 93-007
ROCKY FLATS PLANT
EPA ID NUMBER CO7890010526

This report is made in compliance with the requirements of 6 CCR 1007-3, Parts 264 56 (j) and 265 56 (j) for a written report within 15 days of the implementation of the RCRA Contingency Plan. The requirements for this are given below and will be addressed in the order listed, excerpted from 6 CCR 1007-3, Parts 264 56 and 265 56

“(j) . Within 15 days after the incident, he must submit a written report on the incident to the department. The report must include

- (1) Name, address, and telephone number of the owner or operator
- (2) Name, address, and telephone number of the facility
- (3) Date, time, and type of incident (fire, explosion)
- (4) Name and quantity of material(s) involved
- (5) The extent of injuries, if any
- (6) An assessment of actual or potential hazards to human health and the environment, where this is applicable, and
- (7) Estimated quantity and disposition of recovered material resulted from the incident ”

In addition, information is also being included in this report to address the reporting and notification requirements of 6 CCR 1007-3 Section 265 56(i) and CCR 1007-3 Section 265 196(d)

- (8) Notification requirements of 6 CCR 1007-3 Section 265 56(i)
- (9) Tank system release reporting requirements of CCR 1007-3 Section 265 196(d)

(1) NAME, ADDRESS AND TELEPHONE NUMBER OF THE OWNER OF THE FACILITY

United States Department of Energy
Rocky Flats Plant
Post Office Box 928
Golden, Colorado 80402
(303) 966-2025

Facility Contact
A H Pauole, Manager

(2) NAME, ADDRESS AND TELEPHONE NUMBER OF THE FACILITY

U S Department of Energy
Rock Flats Plant
Post Office Box 928
Golden, Colorado 80402
(303) 966-2025

August 4, 1993

(3) DATE, TIME, AND TYPE OF INCIDENT

A. Summary

A hazardous waste incident occurred on July 20, 1993. The incident involved the Interceptor Trench (ITS) and ancillary equipment associated with the Modular Tanks and Building 910 Treatment System (RCRA Unit No. 38). The incident involved a failure of a primary pipe and secondary containment system and resulted in a spill/leak of hazardous waste. The incident was discovered at approximately 1:30 p.m. Hazardous waste was being pumped from the Modular Tanks to the Building 910 treatment facility when a primary transfer pipe failed, causing waste to leak/spill into the secondary containment pipe. The released material filled the secondary containment pipe causing hazardous waste to spill from the secondary containment pipe into the modular tank pumphouse secondary containment. In addition, the excessive amount of waste in the transfer piping secondary containment caused a hose connection on the secondary containment pipe to fail and resulted in a leak of hazardous waste into the ITS sump.

The contingency plan was implemented on July 20, 1993 as a precautionary measure, due to the fact the concrete sump (ITS sump) that received the hazardous waste was unlined. There is no evidence to suggest that the waste leaked from the sump, but, as stated above the contingency plan was implemented as a precautionary measure. In addition, the contingency plan was implemented because some of the released material was not removed from the secondary containment of the transfer piping within 24 hours.

B. System Description

The involved system is a collection, transport, storage, and treatment system used to manage surface/ground water at the northeast portion of the RFP site. The ITS and its predecessor trench systems were installed to collect and return ground water to the Solar Ponds for treatment to remove nitrates (reference Historical Release Report for the Rocky Flats Plant, June, 1992). The nitrate level continues to exceed applicable stream standards for Walnut Creek.

The system is an Interim Status unit, permitted through the mechanism of the Interim Measure/Interim Remedial Action (IM/IRA). (The IM/IRA Decision Document for the Solar Evaporation Ponds Operable Unit No. 4, April, 1992 states on page 1-1 "this IM/IRA is a mechanism for permitting the use of the proposed treatment (i.e., use of surge tanks and flash evaporators) as directed by EPA and CDH." Subsequently, at CDH request (Baughman to Hartman, September 2, 1992), a revised Part A permit application was submitted which covers the tanks and flash evaporators.)

The system includes a) Interceptor Trench System (ITS), b) three (3) Modular Storage Tanks, c) Building 910 Treatment System, and all related ancillary equipment. Figure 1 is a system layout and Figure 2 is a schematic of the transfer systems. The following is a description of the system components:

a) Interceptor Trench System (ITS)

- 1) The ITS system includes an extensive French Drain system of perforated pipes that collects and transports surface and ground water to the ITS sump (reference Figure 2 - item a1)

August 4, 1993

- 2) The ITS sump is an underground, unlined, concrete vault that stores the surface and ground water (reference Figure 2 - item a2) The ITS sump is not secondarily contained.
- 3) A small building housing two pumps is located on top of the sump (reference Figure 2 - item a3) The sump pumps transfer the surface and ground water collected in the sump several hundred feet to the modular storage tanks. In accordance with 6 CCR 1007-3, the pumping operation is considered a waste generation point At this point, the generated waste (pumped surface/ ground water) is characterized as RCRA hazardous waste.

NOTE The ITS pumphouse is the physical low point of the transfer systems for both the pipeline from the ITS sump to the Modular Tanks (reference Figure 2 - item a4) and the pipeline from the Modular Tanks pumphouse to Building 910 (reference Figure 2 - item b4 and b5)

- 4) The RCRA hazardous waste (pumped surface/ ground water) is pumped from the ITS sump pump, through a 3-inch secondarily contained, buried pipe, several hundred feet to one of 3 modular storage tanks (reference Figure 2 - item a4)

b) Modular Storage Tanks

- 1) The hazardous waste (pumped surface/ ground water) is stored in three modular storage tanks (reference Figure 2 - item b1) until it is pumped to the Building 910 treatment system
- 2) A secondarily contained, buried pipe (reference Figure 2 - item b2) transports waste from the modular tanks to the modular storage tank pumphouse (reference Figure 2 - item b3)
- 3) A pumphouse (reference Figure 2 - item b3) is located several feet from the storage tanks and contains two pumps that transfer the waste from the modular storage tanks to the Building 910 treatment system The pumphouse includes a epoxy-coated steel secondary containment with an automatic feed cutoff that shuts down the pumps when a high level is reached in the pumphouse secondary containment The leak detection system includes a local and remote alarm The secondary containment for the transfer pipe from the tanks to the pumps is open ended (daylights) in the modular tank pumphouse
- 4) The waste is pumped through 2-inch secondarily contained, buried pipe (reference Figure 2 - items b4 and b5) several hundred feet from the modular tank pumphouse through the ITS sump (reference Figure 2 - item a2) and to the Building 910 treatment system (reference Figure 2 - item c) The primary containment pipe is continuous and does not open to or stop at the ITS sump The secondary containment piping is divided into two sections to allow segregation and identification if a leak should occur The partition between the two section of secondary containment is located within the ITS sump The automatic leak detection system for these two sections of secondary containment was not operational, therefore, daily inspections were being conducted until the automatic system could be made operational The pipeline

from the modular tank pumphouse to Building 910 (reference Figure 2 - item b4) shares a common trench with the pipeline from the ITS sump to the modular storage tank (reference Figure 2 - item a4)

- 5) From the ITS sump, the continuous pipe (and secondary containment around the pipe) goes to the building 910 Treatment System (reference Figure 2 - item c) From ITS sump (reference Figure 2 - item a2), the transfer pipe continues by itself to the Building 910 treatment facility (reference Figure 2 - item c)

c) Building 910 Treatment Facility

- 1) The Building 910 treatment facility (reference Figure 2 - item c) includes storage tanks and three evaporative units that treats the waste (pumped surface/ ground water)

C. Description of Incident and Immediate Response:

Hazardous waste from the Temporary Modular Tanks, which stores liquid collected by the Solar Evaporation Ponds Interceptor Trench System (ITS), was being pumped to Building 910 for treatment in the Acceptance Phase of the building's operation. At approximately 10 30 a m on July 20, 1993, operators conducted the daily inspection of the tank system which includes the ITS sump and Modular Tank pumphouse. No problems or unusual conditions were identified.

Prior to 1 00 p m on July 20, 1993, a leak occurred in the primary containment piping (reference Figure 2 - item (b4)) located between the modular tanks and the ITS sump (reference Figure 2 - item a2) which allowed waste to leak into the secondary containment. Due to the location of the leak in the pipeline, the hazardous waste that leaked into the secondary containment overflowed back into the Modular Tank pumphouse (reference Figure 2 - item b3) and also gravity-drained through a failed hose connection on the secondary containment piping (reference Figure 2 - item a2). The failed hose connection is located within the ITS sump. The ITS sump is equipped with an automatic level controls and the material that spilled into the ITS sump was pumped back into the Modular Tanks. The hazardous waste that overflowed into the Modular Tank pumphouse was fully contained in the pumphouse secondary containment. When the liquid level in the pumphouse secondary containment rose, the leak detection system was activated, the local alarm was activated, and the pumps were automatically shut down. The remote alarm via telemetry to Building 374 did not, however, function. Problems had occurred previously and this alarm was not reliable, therefore, it had not been considered operational and compensatory measures were in place to perform daily checks of the local alarm panel. This deficiency had been identified as an open item to be corrected.

At approximately 1 00 p m, Operators in Building 910 were alerted to a problem when feed from the Modular Tanks ceased flowing to Building 910. The operators investigated (at approximately 1 30 p m) and discovered that the pump had automatically shut-down due to liquid on the floor of the pumphouse. Liquid was apparently still siphoning out through the pump, therefore, the operators immediately stopped the flow of hazardous waste by closing manual

operators immediately stopped the flow of hazardous waste by closing manual valves

D Corrective Action

Applicable requirements of 6 CCR 1007-3 Part 264 196 will be met prior to system restart

- 1) In accordance with 6 CCR 1007-3 Part 264 196 (a) - Cessation of Use
The pump automatically shut-down when the liquid level in the pumphouse reached the level sensor. Operators observed some siphoning of liquid through the pump, and immediately closed the manual valves to isolate the line and stop the flow of hazardous waste. While verifying the cause of the problem, the pump was operated for a short duration (less than one minute) to confirm the location of the leak. The pumps and valves were locked out/tagged out at 9:30 p.m. on July 20 to prevent any addition of hazardous waste to the transfer pipe.

NOTE The ITS is continuing to collect ground water into the sump, and that ground water was pumped to the Modular Tanks as needed. These sump operations are routine, automatic, and continuous.

- 2) In accordance with 6 CCR 1007-3 Part 264 196 (b)(2) - Removal of hazardous waste from the secondary containment
 - a) On July 20, the hazardous waste that had collected in the secondary containment system of the pumphouse was pumped into a liquid waste dumpster and trucked to Building 374 for treatment.
 - b) Hazardous waste continued to drain from the hose connection on the secondary containment into the ITS sump for several hours. The sump was checked several times after the problem was initially discovered at about 1:30 p.m. on July 20, and drainage from the secondary containment had ceased by 4:30 p.m. on July 20 when the transfer piping secondary containment drained to the low point of the line in the ITS sump. The material that drained into the sump was automatically pumped back into the Modular Tank system and was removed from the sump by 5:00 p.m. on July 20.
 - c) Some hazardous waste, however, remained in the annulus of the secondarily contained piping below the elevation of the disconnected hose connection. Upon completion of a work package (including a confined space permit), approximately 2 to 3 gallons of hazardous waste was drained from the annulus on August 2, 1993.
- 3) In accordance with 6 CCR 1007-3 Part 264 196 (c) - Containment of visible release to the environment. There were no visible releases to the environment. Since the ITS sump is below ground, the sump cannot be visually inspected to assure that no hazardous waste has escaped to subsurface soil or water. Due to the fact the concrete sump (ITS sump) that received the hazardous waste was unlined, the contingency plan

was implemented as a precautionary measure. There is no evidence to suggest that the waste leaked from the sump.

- 4) In accordance with 6 CCR 1007-3 Part 264 196 (d)- Notification and reports. The CDH and EPA were notified of this occurrence on July 21, 1993 as a precautionary measure due to the possibility of a release to the environment of greater than one pound of hazardous waste from the unlined concrete sump. Submission of this RCRA Contingency Implementation Report satisfies 6 CCR 1007-3 Part 264 196 (d) report requirements.
- 5) In accordance with 6 CCR 1007-3 Part 264 196 (e)(3) - Repair of the affected system. The system will be returned to service as soon as the necessary repairs are completed. The following actions will be completed prior to returning the system to operation:
 - Repair the primary transfer line,
 - Repair or modify the portion of the secondary containment of the transfer line (the hose connection) within the ITS sump that failed and resulted in the leak of hazardous waste from the secondary containment system, and
 - Retest the primary line following the repair.
- 6) In accordance with 6 CCR 1007-3 Part 264 196 (f)- Certification of major repairs. The repair of the system is not expected to be extensive (per §265 196(f), examples of extensive repairs are installation of an internal liner or repair of a ruptured vessel), therefore the certification by an independent, qualified, registered, professional engineer may not be required prior to resuming operations.

E Operational Status

The ancillary equipment associated with the spill is currently shut down and locked out of service until the repairs to the leak in the primary and secondary systems are repaired. When the system is returned to operation, operation will be in compliance with RCRA.

(4) MATERIAL INVOLVED

As specified in 6 CCR 1007-3, ground water is not a solid waste and the "mixing" and "derived from" rules are not operable in this system. The ITS system, including the French Drain system, are not hazardous waste systems and the surface/ ground water in these systems is not characterized as hazardous waste (reference Figure 2 - item a1). The surface/ ground water stored in the ITS is not characterized as hazardous waste (reference Figure 2 - item a2).

The released material is, however, RCRA F-listed hazardous waste. In accordance with 6 CCR 1007-3, the pumping operation at the ITS sump is considered a waste generation point (reference Figure 2 - item a3). At this

August 4, 1993

point (reference Figure 2 - item a3), the surface/ ground water is recharacterized as RCRA F Listed hazardous waste because the "contained in" rule is operable. The applicable EPA waste codes are F001, F002, F003, F005, F006 F007, and F009.

In accordance with 6 CCR 1007-3, the waste remains a listed hazardous waste (F001, F002, F003, F005, F006 F007, and F009) as it moves through all other parts of the system.

(5) EXTENT OF INJURIES

No injuries occurred.

(6) THREAT TO HUMAN HEALTH OR THE ENVIRONMENT

The spill/leak did not result in an additional threat to human health or the environment.

The Modular Tank pumphouse fully contained the hazardous waste spilled into the pumphouse secondary containment.

The spilled hazardous waste originated in the ITS sump. There is no physical or chemical difference between the spilled hazardous waste and the surface/ground water collected in the ITS sump. The only difference in the material is that one is classified as hazardous waste and the other is classified as surface/ground water. Due to the fact the concrete sump (ITS sump) that received the hazardous waste was unlined, the contingency plan was implemented as a precautionary measure. There is no evidence to suggest that the waste leaked from the sump.

Approximately 3 to 4 million gallons of ITS water is collected in the sump each year, and the amount of the spill represents a very small increase (less than 1%) in the volume handled in the sump. The ITS system was not designed to collect all of the ground water flowing under the ponds at the depth of the trench system and any material that leaked from the ITS sump would rejoin that ground water that currently flows from the sump.

(7) QUANTITY AND DISPOSITION.

A Quantity.

Approximately 4,700 gallons of hazardous waste were leaked from the pipeline secondary containment. The volume was estimated as follows:

- 1) Approximately 300 gallons of hazardous waste were spilled to the Modular Tank pumphouse secondary containment, based on the known area of the floor and the observed depth of four inches.
- 2) Approximately 4,400 gallons of hazardous waste were spilled to the ITS sump. Hazardous waste from the sump was pumped to the east Modular Tank, and operators observed that the level in the tank rose less than

one inch. The tank holds about 6000 gallons per inch of height. The installed flow totalizer in the ITS pumphouse indicated approximately 5,000 gallons had been pumped from the sump to the Modular Tank between 10:30 a.m. and 4:30 p.m. on July 20. Inflow from the trench system to the sump would have contributed approximately 600 gallons during this period. Thus, the estimate of 4,400 gallons was derived from this data. The hazardous waste was recovered from the sump by about 5:00 p.m. on July 20. In addition, the volume released was estimated based on a mathematical equation which indicated that the volume released was about 3,000 gallons.

The original notification to CDH and EPA had estimated that 6300 gallons had leaked from the secondary containment system. The quantity has been revised based on the above facts.

It is estimated that less than 0.01 pound of hazardous waste constituents were leaked into the secondary containment system. This estimation is based on the a spill of 4,700 gallons (about 40,000 pounds) of hazardous waste and a hazardous waste constituent concentration of 50 ppb. The contaminant concentration level is based on historical data for the ITS waste stream.

B Disposition

The hazardous waste that overflowed into the Modular Tank pumphouse was pumped into a portable tank and trucked to Building 374 for treatment. The wipes used in the final cleanup of the pumphouse were designated as hazardous waste (mixture rule), and placed into drums and are properly stored in a RCRA satellite accumulation area in Building 910.

The hazardous waste that spilled into the ITS sump was recovered into the Modular Tanks. This recovery represents the normal, automatic functioning of the system. No change to the characteristics of the hazardous waste occurred, and the hazardous waste will be treated in existing facilities.

(8) RESUMPTION OF OPERATIONS NOTIFICATION

Based on the requirements of 6 CCR 1007-3 Part 264.56 (i), the owner or operator must notify CDH that the facility is in compliance with 6 CCR 1007-3 Part 264.56 (h) prior to resuming operations. The system is in compliance with the requirements outlined in 6 CCR 1007-3 Part 265.56(h)(1) in that all of the released material has been treated or stored. The system is also in compliance with the requirements outlined in 6 CCR 1007-3 Part 265.56(h)(2) in that only incidental release supplies used to respond to this incident were from routine operations supplies and no incidental release response supplies were used. In addition, no equipment specifically listed in the contingency plan were used to respond to this incident.

(9) TANK RELEASE REPORTING REQUIREMENTS

Based on the requirements of 6 CCR 1007-3 Part 264.196 (d), a report containing the following information must be submitted to CDH:

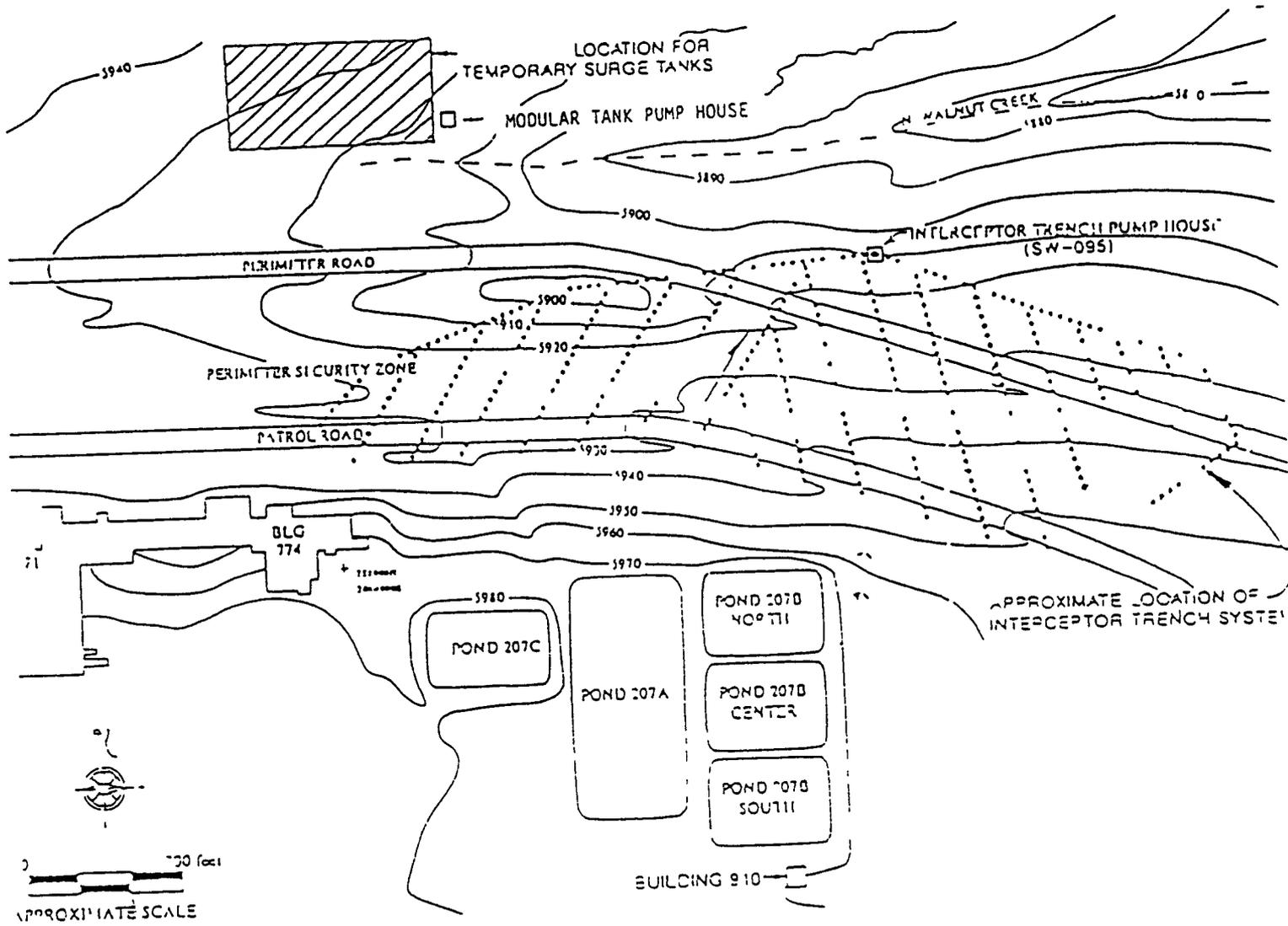
The route of migration of such a release would be into the ground water that flows to the Walnut Creek basin

Characteristics of the surrounding soil are available in the IM/IRA

No additional monitoring will be initiated in response to this specific incident because. The area of the ITS already experiences ground water flow from under the ponds, the Operable Unit will be remediated as part of the Interagency Agreement (IAG), and retention basins are operated in the Walnut Creek drainage that lead to a NPDES discharge point in Walnut Creek

Characteristics of downgradient waters and populations are available in the IM/IRA

A description of the response action taken or planned are included in section 3 of this report.



Solar Evaporation Pond Area

FIGURE 1

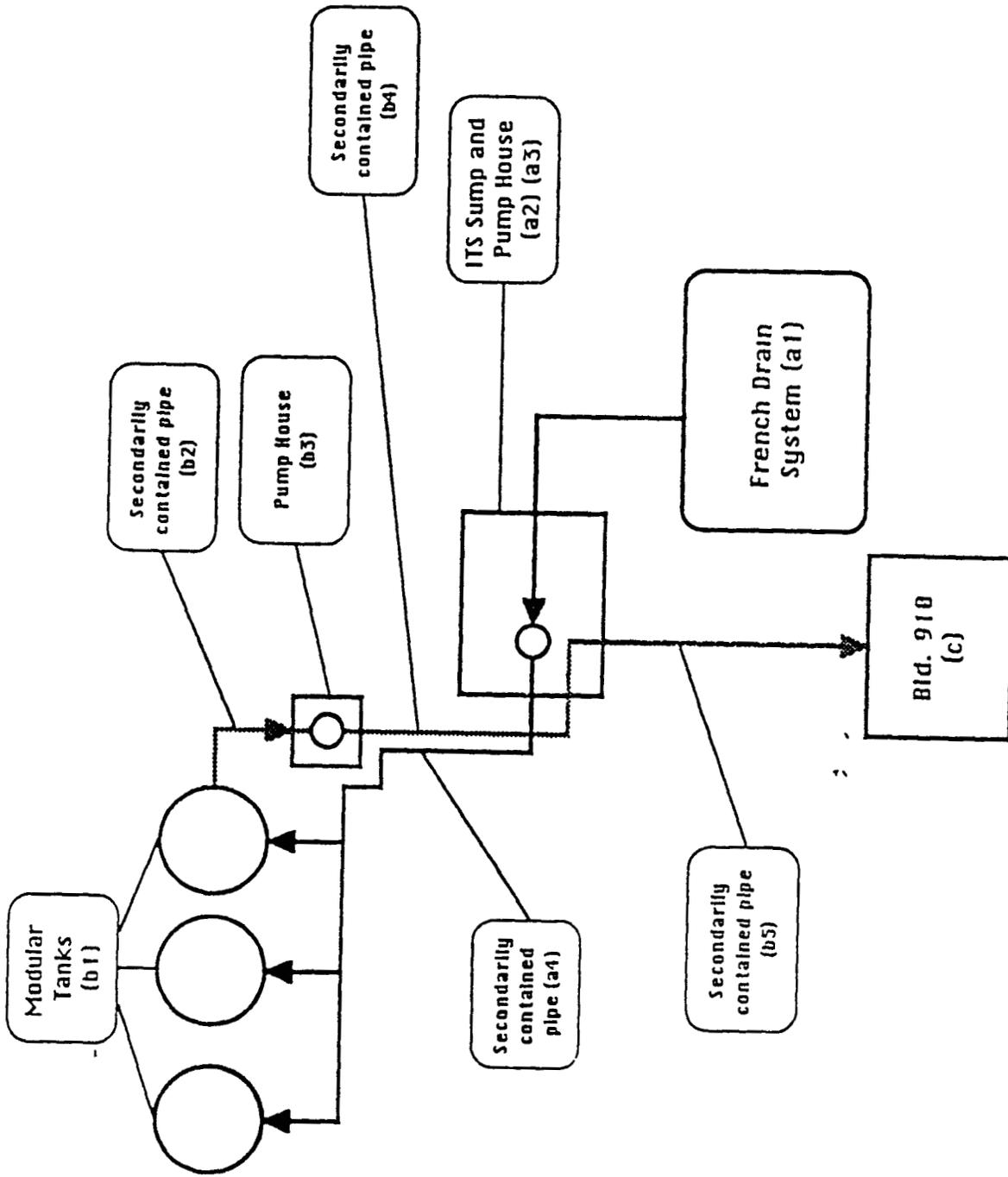


FIGURE 2

F9392

EG&G ROCKY FLATS

S- LTR ENC
II

EG&G ROCKY FLATS, INC
ROCKY FLATS PLANT, P O BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

AL GJ		
H A A	X	X
TD		
JG		
P W	X	X
SA DW		
ST L A	X	X
BJ		
N L K		
T J		
L T G	X	X
J G		
W A		
ER A W		
HP		
JEZ A	X	X
GE		
JACO MM		
NA FG		
JOSE JK		
AN HV	X	X
O V M		
H G L	X	X
J H		
T L	X	X
IN NH		
BERT AL	X	X
CK G H	X	X
ER RL		
ART DL		
JAN MT		
SC H		
B		

August 9, 1993

93-RF-9392

A H. Pauole
Acting Manager
DOE, RFO

Attn: D Grosek

BACKUP DATA REPORT FOR RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
CONTINGENCY PLAN IMPLEMENTATION REPORT (CPIR) NO 93-007 - TGH-461-93

Enclosed is the final backup data report for RCRA CPIR No 93-007. The report has been developed to document the outstanding actions that remain as a result of the release of hazardous waste from the Solar Evaporation Pond Interceptor Trench System (ITS). The report includes a schedule for repairing the equipment that caused the release, as well as, a schedule to complete tasks to enhance operations. The report also includes information concerning the basis of characterization.

If you have any questions regarding this subject, please contact either R W Boyle at extension 6926 or M L Johnson at extension 5033

ETJ	X	X
LEM	X	X
SEN ML	X	X
PPJ	X	X
KE	X	X
RW	X	X
RP	X	X
JA	X	X
PS	X	X
NSA	X	X
ES CTRL	X	X

T G Hedahl, Associate General Manager
Environmental and Waste Management

MLJ kam

CLASSIFICATION

CLASSIFIED	X	X
IDENTICAL		
ET		

Orig and 1 cc - A H Pauole

Enclosure
As Stated

ORIG CLASSIFIER

SIGNATURE
[Signature]
3/0/93

PLY TO RFP CC NO

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ON ITEM STATUS

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VALS 8 to 43
AAAC

OPERATOR & TYPIST INITIALS
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**BACKUP DATA REPORT
RCRA CONTINGENCY IMPLEMENTATION 93-007**

This Backup Data Report was prepared because there are outstanding actions needed to close the incident. The system has been and will continue to be operated in compliance with RCRA requirements once these repair actions are complete.

(1) Plan and Schedule for Achieving Compliance

The portion of the system that failed is a pipeline that transfers liquid between the Modular Tank pump house and Building 910. The repairs to the line and secondary containment are driven by the need to return the line to operation prior to filling the Modular Tanks, since once those tanks are full there is no approved storage location for the ground/surface water collected by the ITS.

The following actions remain to be completed prior to returning the system to operation:

- Repair the primary transfer pipeline
- Modify the secondary containment of the portion of the line within the ITS sump to prevent leakage of water back into the sump. Although the portion of the line can be visually inspected, it is preferable to modify the secondary containment in this manner, and
- Retest the line following repair

The following tasks will be completed in a timely manner to enhance operability of the system:

- Complete or repair the installation of leak-detectors in the secondary containment portion of the line that were not operational at the time of the incident,
- Confirm that the process control logic supports positive shut-down of the pumps when a leak is detected in the secondary containment system in the ITS sump,
- Repair the remote alarm which was not operable when the liquid (waste) was released into the pump house,
- Analyze pressure conditions in the Building 910 feed system to determine if components experienced an over-pressurization (repair as needed), and
- Incorporate pressure-surge control as needed to ensure "hammer-free" operation when the liquid discharge is intermittently secured by automatically operating feed valves in Building 910.

August 5, 1993

Detailed information on these actions follows:

Action	OCR Citation*	Start	Completion	Responsible	PATS #
Repair Transfer line	264.196(e)	August 4, 1993	August 10, 1993	Ledford	TBD
Repair leak detectors	264.193(c) (3)	August 4, 1993	August 11, 1993	Ledford	TBD
Process control logic	264 193(b) (2)	August 9, 1993	August 9, 1993	Ledford	TBD
Repair alarm	264.193(c) (3)	August 9, 1993	August 9, 1993	Ledford	TBD
Over-pressurization repair	264 192(e)	August 12, 1993	August 12, 1993	Ledford	TBD
Pressure-surge control	264 192(e)	August 3, 1993	August 9, 1993	Ledford	TBD
Secondary containment within sump	264 193(e) (1)(iii)	August 3, 1993	August 16, 1993	Ledford	TBD
Retest line	pending**	August 17, 1993	August 17, 1993	Ledford	TBD

- * References to 264 XXX because this section was listed as the ARAR for the tank system in the IM/IRA
- ** Preliminary determination is the repair is not a major repair per 264 196(e), therefore, the line may not be required to be evaluated by an independent Professional Engineer.

No long-term or high risk situations are expected to exist for the pipeline and the related system

Plant Action Tracking System (PATS) tracking will be used only for those actions extending beyond approximately fifteen days of the event. Detailed scheduling is currently underway

2) JUSTIFICATION FOR DELAYED COMPLIANCE OR OPERATION IN NON-COMPLIANCE

EG&G is planning and taking all actions necessary to return the line to full compliance. The actions will not be completed "immediately" because diagnosis of the problem and planning of the activities is necessary to support effective repair. Actions will be completed in full accord with applicable requirements, and will be completed (or demonstrated to be unnecessary) prior to returning the line to service.

August 5, 1993

On July 20, 1993, approximately 4,700 gallons of hazardous waste leaked into the secondary containment system for the transfer piping. The released material then overflowed into the Modular Tank pumphouse and leaked into the ITS sump. On July 20, 1993, the system was brought into compliance with §264.196 (b)(1) in that the system was shut down and drained below the leak point.

On July 20, 1993 all of the released material had been removed except for approximately 2 to 3 gallons that remained in a small section of double contained piping which terminated inside the ITS sump. This material had not drained from the disconnected hose connection because of the elevation differences (e.g. the material was trapped inside the annulus below the level of the hose connection). On August 2, the remaining 2 to 3 gallons of released material was removed from the annulus of the secondary containment for the piping and the system was brought into compliance with §264.196 (b)(2). A confined entry permit and an integrated work control package was required to remove the last of the released liquid waste.

3) REGULATORY ANALYSIS

The RCRA Contingency Plan was initially implemented because pumped ITS surface/ground water, characterized as a mixed hazardous waste, was spilled into an unlined, concrete sump and there is a possibility that there is a leak path to the environment, e.g. permeation through the concrete (reference 6 CCR 1007-3 §264.51 (b)). In addition, the material released into the secondary containment system (the secondary pipe) was not removed within 24 hours (reference 6 CCR 1007-3 §264.196 (b)(2)). EG&G cannot demonstrate that the sump is leak-tight (the ITS sump is below ground, the sump cannot be visually inspected to assure that no hazardous waste has escaped to the subsurface soil or water so some of the water may have escaped from the sump), therefore, the Contingency Plan was implemented as a precautionary measure.

The status of the material before and after the incident is unchanged, and the hazardous waste that was recovered has been either transported to Building 374 or returned to the Modular tanks to be treated in waste treatment systems that routinely handle the process aqueous hazardous waste.

The pumped ITS surface/ground water has been characterized as RCRA-regulated waste because, at any specific time, the ground water collected in the trench may contain detectable levels of RCRA-regulated listed hazardous waste. RCRA-regulated waste may have leaked from the Solar Ponds and mixed with ground water prior to that ground water flowing into the trench system and central sump. The RCRA-regulated waste in the Solar Ponds may include listed hazardous wastes from non-specific sources: spent halogenated solvents, spent non-halogenated solvents, and electroplating waste (F001, F002, F003, F005, F006, F007, and F009). Previously, the pumped ITS surface/ground water was also suspected of exhibiting the toxicity characteristic for cadmium (D006), during the recent acceptance phase operation of Building 910, however, the database on ITS waste stream was reviewed and seen to document that cadmium levels are below the regulatory level for D006. The waste stream is described in the WSRIC

August 5, 1993

for Building 910 The ITS waste stream has been characterized in the IM/IRA, and no further characterization is needed in response to the release.

Summary statistics of select RCRA regulated constituents associated with the Solar Pond Evaporation system are shown in Table 1 for samples of ITS water taken in 1991 and 1992. A sample of the released material was taken and was analyzed for nitrates to confirm that the analytical data collected historically for the ITS water is representative of the material released. The nitrate level measured with a test kit was 104 mg/l which is below the range documented in the IM/IRA which indicates that the contamination level of the released material is below the range of the historical data (190-724 for nitrate/nitrites)

There are no additional health and safety impacts due to this release. Routine risks associated with construction and maintenance activities on-site will be encountered during the repairs and will be evaluated by Industrial Engineering

Environmental impacts will be negligible: Approximately 3 to 4 million gallons of ITS ground/surface water is collected in the ITS sump each year, and the amount of material spilled to the sump represents a very small increase (much less than 1%) in the volume handled in the sump; the area of the ITS already experiences ground water flow from under the ponds; the area will be remediated as part of Operable Unit 4, the ITS system probably does not collect all of the ground water flowing under the ponds at the depth of the trench system, so any escaped material would rejoin that ground water flow, retention basins are operated in the Walnut Creek drainage that lead to a NPDES discharge point in Walnut Creek

No delays are expected in implementing the repair schedule

4) RISKS AND BENEFITS OF OPERATING IN NON-COMPLIANCE

N A The transfer pipeline will not be operated prior to the required repairs being completed

5) NAME OF PROJECT MANAGER

The EG&G manager for the repair activities is Steve Keith, ER SPRP, extension 8541 The work package manager is Ray Boyle, ER SPRP, Extension 6926 The project manager is Andy Ledford , ER SPRP, extension 8673.

6) CRITIQUE MEETING NOTES

Copy of draft meeting notes are attached

August 5, 1993

TABLE 1
SUMMARY STATISTICS FOR STATION SW095
1991-1992

<u>Constituent</u>	<u>Number of Samples</u>	<u>Number of Detects</u>	<u>mean MG/L</u>	<u>Regulatory limit MG/L</u>	<u>Estimated Amount Released lb</u>
TOTAL METALS(1)					
Cadmium	24	0	00184(2)	1.0(2)	0 000074
Chromium	26	8	.00984	5 0(2)	0 000394
Lead	28	2	.00123	5.0(2)	0 000049
Silver	22	2	00393	5 0(2)	0 000157
ORGANICS					
Methylene Chloride	25	0	00230(3)	0 44(4)	0 000092
Carbon Tetrachloride	25	1	00258	0 057(4)	0 000103
Chloroform	25	0	00192(3)	0.046(4)	0.000076
Tetrachloroethene	25	0	.00250(3)	0 056(4)	0 000100
Toluene	25	0	00250(3)	0 080(4)	0 000100
Trichloroethene	25	2	00302	0 054(4)	0.000121
PLATING SUBSTANCES					
Cyanide	25	1	01000	1 2-1 9(4)	0 000400
Nickel	25	2	01042	0 040(4)	0 000417

- (1) Concentration of metals below characteristic regulatory limit therefore, water is not regulated characteristic waste
- (2) TCLP maximum concentration of contaminants for toxicity characteristic
- (3) Mean calculated using half the detection limit for concentrations at the detection limit.
- (4) Land Disposal Restricted (LDR) Constituent Concentration treatment standard levels in wastewater (reference §268 43)

August 5, 1993

DRAFT

CRITIQUE MEETING MINUTES

OCCURRENCE TRACKING NUMBER: 1993 - 1077

MEETING DIRECTOR: P. J. LARSEN

PHONE NUMBER: 2996 ORGANIZATION: Liquid Waste Ops Bldg: 774

DATE PREPARED: 7/23/93 EVENT DATE: 7/21/93 MILITARY TIME: 1300

BUILDING. 308A PUMPHOUSE

PROCESS. TEMP MOD STORAGE TANKS

Did anyone attend a pre-critique of planning meeting for this critique?

No

If so, what was discussed and were any instructions given on what to say at the critique?

N/A

OPERATING CONDITIONS:

Normal Operations

SUMMARY OF INCIDENT: (Describe in sequential steps)

On July 20, 1993, between the hours of 0900-1000, a RCRA inspection of 308A and 308B was completed. 308A was operating according to procedure and all valves were appropriately lined-up. At approximately 1100 hours, LWTO operators commenced startup of one Building 910 evaporator unit. The unit had been functioning normally for approximately 2 hours when operators noticed a loss of feed to the system. The shift foreman immediately notified the building operations manager of the situation and they proceeded to the 308B pumphouse to investigate the loss of flow. Upon arrival at the 308B pumphouse, the foreman and manager observed water on the pumphouse floor. This water had caused the pump to shut down.

At approximately 1330 hours, LWTO personnel began pumping water from the floor of 308B (approximately 300 gallons). During the pumping operation LWTO personnel opened a valve and realized they had a siphon condition, which indicated a possible leak in the pipe from 308A to 308B. LWTO personnel proceeded to 308A central sump and observed water coming from a hole in the secondary containment.

INJURIES/ILLNESS Yes ___ No X Describe

DRAFT

CRITIQUE MEETING MINUTES
OCCURRENCE #1993-1077
PAGE 2 OF 2

IMMEDIATE RESPONSE ACTION (Action(s) taken to control and prevent further aggravation of situation)

LWTO personnel immediately isolated the appropriate valves in 308^B and opened a vent valve to stop the flow of water. This action also stopped the siphon condition. The appropriate valves were locked out and tagged out to prevent further water leakage to the sump. LWTO initiated a work package to remove any remaining water in the secondary containment. All water was removed from the 308B pumphouse floor by 2200 hours on July 20, 1993 and the pumphouse is now in a dry condition.

Departments involved:

Liquid Waste Operations

CRITIQUE MEETING MINUTES
OCCURRENCE #1993-1077
PAGE 3 OF 2

DRAFT

LIST OF MEETING ATTENDEES:

<u>Name</u>	<u>Organization</u>	<u>Phone</u>
P. J. Larsen	LWTO	2996/1964
D. L. McCoy	JCUSC	5298/1792
G. A. Pickerel	E&T	3836/5786
D C. Foro	DOE-RFO/CED	
S. T Kozel	E&T	2576/5268
R. W Boyle	SPP	6926/4225
H. D McDowell	DOENUO	4685
E. Pitchkolan	DOE-RFO/CED	3707
K. Fournier	LWTO	2250
M Johnson	WRP	5033/1028
E I. Atchison	SPP	8722/7018
J. A. Ledford	SPP	8673/5338

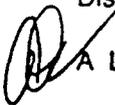
 MEETING DIRECTOR DATE

DRAFT

 APPROVED OPERATIONS MANAGER DATE



INTEROFFICE CORRESPONDENCE

DATE July 30, 1993
 TO Distribution
 FROM  A L Schubert, Waste Programs, Bldg T130C, X5251
 SUBJECT HAZARDOUS SUBSTANCES RELEASE REPORT - 1993 SECOND QUARTER -
 ALS-431-93

Attached is the Hazardous Substances Release Report for the time period of April through June 1993. For trending purposes, data from the previous nine months are also included, and the total period covered is July 1992 through June 1993. In addition, two charts are included for long-term trending analysis which display all available data (January 1990 through June 1993). The report is divided into four sections: 1) Offsite Regulatory Notifications, 2) Root Cause Analysis, 3) Release Graphics and 4) Special Topics. Please route this report to all personnel with interest or responsibility for release investigations or critique meetings.

If you do not wish to receive a copy of this report, please send a written request to M L Johnson, Waste Regulatory Programs, Building T130C. If you have any questions or would like more information, call M L Johnson at extension 5033 or digital pager 1028, or B B Haynes at extension 7754 or digital pager 0620.

BBH aaf

Attachment
 As Stated

Distribution

H S Berman	C E Kennedy	G. H Thompson	J L. Henderson	S W Rohrig
J M Bower	W A Kirby	C E. Trump	K A. Holstein	S A Schreeder
D B Branch	A W Kuester	R B Wilkinson	M L Johnson	D L Scott
M C Broussard	B D Larsen	J M Wilson	E A Keil	W P Speigel
J R Cable	E M Lee		S W Kranker	D S Tallman
J A Ciucci	H P Mann	cc	R R Ludlam	T B Terrell
R D Copp	G H McElhinney	C C Albin	J R Marschall	M D Thornton
J G Davis	F G McKenna	J M Alexander 	M A Martinez	D L Tuveson
R P Dunn	R V Morgan	A A Church 	V A McCarty	R J Walker
D W Ferrera	V M Pizzuto	N S Demos	B S Mo	R J Widney
J A Geis	J H Riley	P W Edrich	T A Moore	D M Wise
T G Hedahl	J D Roberts	D M Foster	J M Mynard	ONC
J S Higley	J K Roberts	M R Greene	W J Padron	Shift Super
J G Hilbig	J M Shaffer	L A Gregory-Frost	K L Richards	
A J Holifield	R T Stagner	S A Harns	M A Ries	
D R Jackson	S K Stovall	B B Haynes	L C Rock	

Definitions

For the purpose of this report only, the term hazardous substance includes any element, compound, mixture, solution or substance that may endanger human health or the environment including hazardous substances (which include radionuclides) as defined by 40 CFR Part 302, extremely hazardous substances as defined by 40 CFR Part 355, hazardous materials as defined by 49 CFR Part 173, hazardous waste as defined by 40 CFR Part 261, oil and petroleum products (including antifreeze), and nonhazardous substances (e.g. water) contaminated by hazardous constituents.

A release includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging or dumping of a hazardous substance inside any building/containment or to the environment. Release also includes the abandonment or discarding of barrels, containers, and other closed receptacles of any hazardous substance. The discovery of accumulated liquids within secondary containment for Resource Conservation and Recovery Act (RCRA) regulated systems, that appear to be waste-like in nature or have been analytically tested and verified to be a solid or hazardous waste, have also been included in this report.

An internally reportable release includes all solid and liquid releases of hazardous substances equal to or greater than one pound (one pint for aqueous liquids) and all gaseous releases that occur inside or outside buildings or containments. A release of solid or liquid hazardous substance less than one pound is also internally reportable if the release directly impacts the environment. These releases must be reported to the Shift Superintendent and the Occurrence Notification Center (ONC). All reported mercury spills (including releases less than one pound, approximately 2 1/2 teaspoons) are included in the data base. Waste Regulatory Programs is then responsible for evaluating if additional reporting is required to offsite regulatory agencies.

A release reportable to the Department of Energy, Rocky Flats Office (DOE, RFO) is any release that has been categorized and reported to DOE, RFO as an Off-Normal, Unusual, or Emergency occurrence as defined by DOE Order 5000.3B.

Releases from privately owned vehicles (POV) have been specifically identified in the charts. All other releases are from government owned or contractor / sub-contractor owned vehicles / equipment. Releases that occur inside of a building are labeled as Bldg-XXX (reference the releases by location charts). All other spills (including releases identified as Bldg-XXX Vicinity) occurred outside a building.

Offsite Regulatory Notifications.

This section of the report documents the occurrences for which the RCRA Contingency Plan (dated 10-24-91) was implemented, an Environmental Release Report was generated or notifications were made to EPA National Response Center (NRC), State Emergency Response Commission (SERC) and/or Local Emergency Planning Committees (LEPC). Our number one goal is to reduce these occurrences and to minimize the threat to human health and the environment.

When the RCRA Contingency Plan is implemented, a report is filed with DOE, the Colorado Department of Health (CDH) and the Environmental Protection Agency (EPA), Region VIII. The plantsite is required to implement the plan whenever there is a fire, explosion or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

RCRA Contingency Plan.

Specifically at the Rocky Flats Plant (RFP), the RCRA Contingency Plan is implemented whenever there is a release of regulated hazardous waste greater than one pound (or one pint of aqueous liquids) if the release is outside containment. For releases inside containment, the plan is implemented if more than the CERCLA equivalent quantity of regulated waste is released. The plan is also implemented if a release (of any size) from a RCRA-regulated tank system is not cleaned up within 24 hours. In addition, the RCRA Contingency Plan is implemented if there is a fire, explosion or similar event involving a hazardous waste release or an active hazardous waste management unit.

Petroleum Release.

As of July 19, 1991, releases of petroleum products have been evaluated to determine if the resultant waste contained any hazardous waste constituents. If no written documentation is available to demonstrate that the specific petroleum product does not contain any hazardous waste constituents, the material resulting from clean up of a release must be managed as RCRA-regulated hazardous waste.

Ethylene Glycol.

As of September 1, 1991, any release of ethylene glycol (including antifreeze) equal to or exceeding the reportable quantity of one pound (two pounds of a mixture of 50% antifreeze and 50% water) was reported to the NRC. As of June 4, 1992, ethylene glycol spills that were reported to the NRC were not reportable to DOE, RFO (through the occurrence reporting process) unless 100 pounds of ethylene glycol product (approximately 24 gallons of a mixture of 50% antifreeze and 50% water) or more had been released to the environment. As of April 21, 1993, only releases greater than 100 pounds of ethylene glycol product are reportable to the NRC as a statistically significant increase because a continuous release report has been submitted to the NRC. It should be noted that any release equal to or greater than one pound is still reportable to the Shift Superintendent and Occurrence Notification Center.

Cause Analysis

This section of the report is designed to assist the plant site in reducing the number of spills/releases by improving the control systems. These control systems are divided into Personnel, Procedures, and Equipment. Not Investigated refers to spills/releases for which insufficient information is available or manpower is not available to investigate occurrences. All spills/releases equal to or exceeding one pound of liquid or solid are evaluated as to the primary failure mode. All confirmed gas releases are investigated on a case-by-case basis. A new category has been included in the cause analysis to address releases from privately owned vehicles. Typically, these occurrences are not investigated due to the nature of the occurrence. A formal root cause determination is performed by the responsible Operations Manager for all releases that were reported to DOE, RFO through the Occurrence Reporting Process.

We request that Operations Managers continue to investigate the cause of every reportable

release and to initiate corrective action which will preclude any recurrence. Based on the cause analysis documented in this report, 18 incidents were caused by a lack of attention and 26 incidents were caused by maintenance deficiency.

Release Graphics

This section of the report is a three-part package. The data in the first two parts are displayed in three different ways: location of release, substance released, and month of occurrence. The two parts differ in that the first includes all releases of hazardous substances reported for the entire plant site for a 12-month period. The second part limits the data to releases occurring outside buildings or containment structures for the same time period. Outside releases are considered an immediate threat to human health and the environment and should, therefore, be targeted for serious corrective measures. The data include releases greater than or equal to one pound (or one pint for aqueous liquids), except all known releases of mercury have been included in the data base. The release graphics specifically identify releases from privately owned vehicles

An additional part has been added to this section to analyze possible trending of the total number of releases documented from the start date of the database (January 1990) through the second quarter of 1993. Two charts depict the long-term trend of the total number of releases sorted by month. The first includes all releases (inside and outside containment) while the second displays the same releases excluding releases from privately owned vehicles (POVs). Based on data presented in the first graph (excluding data from July 1992), there is a slightly upward trend that is not visually significant. A comparison of the two graphs reveal that the peaks in the trend are significantly amplified by releases from POVs (reference April 1991, August 1991, October 1991, February 1992, April 1992, July 1992, January 1993, and May 1993). POV releases prior to April 1991 were not reported consistently.

Special Topics

This section of the report includes information clarifying release reporting requirements

A buildup of crystalline material on flange connections or fittings is considered a release and may be reportable to offsite regulatory agencies if the release is associated with the RCRA interim status or 90-day storage tank system. The release must be reported to the Shift Superintendent if one pound (or one pint aqueous liquid) or more is released or a release from a RCRA-regulated waste tank system has not been cleaned up within 24 hours. All releases from RCRA interim status or 90-day storage tank systems must be cleaned up within 24 hours

In addition, a release of liquids into plastic wrap covering ancillary equipment (e.g., piping, valves, flanges) is considered a reportable release from the primary containment if: 1) one pound (or pint of aqueous liquids) or greater of RCRA-regulated waste is released into the plastic, or 2) if the liquid from a RCRA-regulated tank is not cleaned up within 24 hours

Additionally, any discovery of accumulated liquids within a secondary containment for RCRA-regulated systems must be cleaned up within 24 hours. If it is not cleaned up within 24 hours, a determination must be made as to whether the liquid is a RCRA-regulated waste, and if this determination cannot be made, the RCRA Contingency Plan may have to be implemented. If the accumulated liquids are known to be non-hazardous and the material has not been cleaned up within 96 hours, then this noncompliance must be reported to DOE, RFO through the Occurrence Reporting process

A release from primary containment (e g , piping, tanks, valves, pumps, etc) of one pound (one pint aqueous liquids) or more of hazardous substance which is contained within a glovebox should be reported to the Shift Superintendent and the Occurrence Notification Center unless the release is associated with in-process accumulation of material.

A release of RCRA-regulated hazardous waste from primary containment that is fully contained within a glovebox does not require implementation of the RCRA Contingency Plan because the release did not impact health or the environment. A release of hazardous waste that is not fully contained within the glovebox may require implementation of the RCRA Contingency Plan.

A release within a glovebox that results in a hazardous waste could result in a noncompliance with RCRA regulations concerning storage of hazardous waste in approved accumulation areas. A case-by-case assessment of the release must be completed by Waste Technical Support (previously known as Waste Area Engineering) to evaluate if the release resulted in noncompliant storage of a hazardous waste or if the release is associated with in-process accumulation of material

Two envirograms have been issued to clarify the requirements for reporting and responding to releases Envirogram No 7 entitled Initial Response to Spills, Leaks, or other Releases of Hazardous Material, Hazardous Substance, or Unknowns, update published 4-15-93; Envirogram No 11 entitled Incidental Release Response Equipment and Supplies, dated 6-3-93.

HAZARDOUS SUBSTANCE RELEASES

OFFSITE REGULATORY NOTIFICATIONS

RCRA Contingency Plan Implementation Reports -
July 1992 through June 1993

<u>REPORT NUMBER</u>	<u>DATE OF RELEASE</u>	<u>AMOUNT RELEASED</u>	<u>MATERIAL RELEASED and COMMENTS</u>
92-019	discovered 7-14-92	< 1 cup	MATERIAL RELEASED: contaminated water Liquid was observed within a secondary containment system for the RCRA-regulated Sump Tank Unit 40 47, Room 151, Building 865, and the waste had not been removed within 24 hours.
92-020	9-15-92	200 gallon	MATERIAL RELEASED: process aqueous waste (D002, corrosive) A release of process waste from a RCRA regulated tank system (sump tank ST-5, RCRA unit 40.15) into the secondary containment occurred. The quantity of released material did not exceed the secondary containment capacity and did not go over the top of the liner. However, approximately 6 gallons were released through the liner but were contained within the concrete pit.
92-021	9-25-92	~1 gallon	MATERIAL RELEASED: fuel, diesel (D018, benzene) A release occurred from an overturned container of diesel fuel on the asphalt; dirt was shoveled onto the spill to contain it. The excess petroleum liquids were covered with oil-dri. The soil and absorbent were erroneously unloaded within the fenced landfill area.
92-022	11-10-92	100 gallon	MATERIAL RELEASED: process aqueous waste (D002, D005, D006, D007, D008, D011) Defective housing in pump leaked 100 gallons of process waste after transfer operation. This liquid was contained within the secondary containment.

92-023	11-30-92	490 gal	<p>MATERIAL RELEASED: interceptor trench water (D006, F001, F002, F003, F005, F006, F007, F009)</p> <p>The transfer line from the central sump to the 207-B north solar pond separated at the berm allowing a release of water down the east slope of the berm outside of the pond</p>
93-001	2-16-93	~ 1 spoonful	<p>MATERIAL RELEASED: caustic solution (D002, D006, D007, D008)</p> <p>A spill of approximately 1 spoonful of caustic into secondary containment was not cleaned up in 24 hours</p>
93-002	3-9-93	50 gallons	<p>MATERIAL RELEASED: water from Walnut Creek (F001)</p> <p>Environmental Management reported a break in the double-contained transfer line for Operable Unit 2 (OU2) located north of the East Access Road. An estimated 50 gallons of water routed from South Walnut Creek to a pilot treatment unit was released onto the soil</p>
93-003	3-18-93	2 - 4 qts	<p>MATERIAL RELEASED: battery solution (D002, D008 for the released material prior to clean up action. Cleanup material is not RCRA regulated based on analytical results.)</p> <p>While transferring spent automotive batteries from storage to the scale in preparation for pickup by the recycler, three batteries were dropped from the fork lift pallet. One of them was run over.</p>
93-004	3-21-93	1 gallon	<p>MATERIAL RELEASED: contaminated water (D019, D029, and D040)</p> <p>Approximately 1 gallon of waste water pumped from Building 559 vault was inadvertently spilled from a tanker during the transfer process</p>
93-005	4-26-93	10 gallons	<p>MATERIAL RELEASED: potentially contaminated water (F001, F005)</p> <p>Approximately 10 gallons of potentially contaminated groundwater spilled onto the soil when a length of surface casing was inserted into a bedrock monitoring well. This occurred in the northeast trench area of Operable Unit 2 at a test well which is a part of a baseline risk assessment</p>

Environmental Release Report to LEPC or SERC

None for July 1992 through June 1993.

EPA National Response Center Notification

<u>REPORT NUMBER</u>	<u>DATE OF RELEASE</u>	<u>AMOUNT RELEASED</u>	<u>MATERIAL RELEASED and COMMENTS</u>
125272	7-6-92	2 gallon	MATERIAL RELEASED antifreeze A release from a private vehicle to the asphalt at parking lot by Portal 2.
125881	7-9-92	1 quart	MATERIAL RELEASED antifreeze A release from a private vehicle to the asphalt at parking lot south of T130D
127185	7-16-92	1 gallon	MATERIAL RELEASED antifreeze A release from a private vehicle to the asphalt at parking lot near T130D
127993	7-21-92	1/2 gallon	MATERIAL RELEASED antifreeze A release from a private vehicle to the asphalt in the parking lot outside of PACs 1.
128303	7-22-92	1 gallon	MATERIAL RELEASED antifreeze A release from a private vehicle to the asphalt in the parking area north of guard post.
128305	7-22-93	1 quart	MATERIAL RELEASED: antifreeze A release from a private vehicle to the asphalt in the parking area north of B-119
132341	8-17-92	1 gallon	MATERIAL RELEASED antifreeze A release from a private vehicle to the asphalt in the parking lot southwest of B-130

132722	8-20-92	~2 gallon	MATERIAL RELEASED	antifreeze	A release from a private vehicle to the asphalt in the parking area north of B-662
133284	8-21-92	1 gallon	MATERIAL RELEASED	antifreeze	A release from a portable welder to the asphalt area by 732 pit
135395	9-4-92	2 1/2gallon	MATERIAL RELEASED.	antifreeze	A release from the radiator hose of a trash truck to the asphalt in the parking area near B-460
135432	9-4-92	1/2 gallon	MATERIAL RELEASED	antifreeze	A release from a welder near the process waste pit 732.
136635	9-14-92	2quarts	MATERIAL RELEASED	antifreeze	A release from a private vehicle to the asphalt in the parking area east of B-112.
139834	10-8-92	1/2 gal	MATERIAL RELEASED	antifreeze	A release from a private vehicle to the asphalt in the parking area near B-886
140809	10-15-92	1 gallon	MATERIAL RELEASED	antifreeze	Hose ruptured on a contractor vehicle causing a release to the pavement of approximately 1 gallon of antifreeze / water solution.
140869	10-16-92	1 quart	MATERIAL RELEASED.	antifreeze	A release from a private vehicle to the asphalt in the B-460 parking area
142199	10-27-92	5 gallon	MATERIAL RELEASED	fuel, diesel	Approximately 5 gallons of diesel fuel leaked from a small fuel tank into the soil. The fuel then leached through the soil into the water

143173	11-3-92	10 gallon	MATERIAL RELEASED antifreeze
			Coolant / antifreeze overflowed from a backup power generator during a test near B-443 Ten gallons was released to the pad and surrounding soil
144062	11-9-92	2 gallon	MATERIAL RELEASED antifreeze
			Employee's personal vehicle ruptured a radiator return hose, discharging fluid to the pavement
144425	11-11-92	28 lbs	MATERIAL RELEASED. asbestos
			Discovered an RQ of asbestos released to the ground from insulation from an old boiler. It was estimated that 28 lbs of asbestos in 40 lbs of insulation was missing from vessel and was on the ground.
147009	11-30-92	490 gallon	MATERIAL RELEASED: interceptor trench water
			The transfer line from the central sump to the 207-B north solar pond separated at the berm allowing a release of water down the east slope of the berm outside of the pond. The weight of the entire mixture was used to determine the quantity of hazardous constituents (D006, F001, F002, F003, F005, F006, F007, F009) released since analytical data was not readily available; the RQ determined for the interceptor trench water was 10 lbs.
147381	12-2-92	4 gallon	MATERIAL RELEASED: antifreeze
			A release from a private vehicle to the asphalt in the parking area north of T-130G.
152336	1-8-93	1/2 gallon	MATERIAL RELEASED: antifreeze
			Approximately 1/2 gallon of ethylene glycol was released to the asphalt from a government vehicle due to a broken temporary weld

157136	2-8-93	2 gallons	MATERIAL RELEASED antifreeze
			A two-car accident near the east gate resulted in a release of approximately 2 gallons of antifreeze to the asphalt
158392	2-17-93	1gallon	MATERIAL RELEASED antifreeze
			A ruptured radiator hose on a Government vehicle released 1 gallon of antifreeze to the asphalt
164292	3-26-93	2 gallons	MATERIAL RELEASED antifreeze
			Approximately 2 gallons of 50/50 ethylene glycol/water mixture was discovered in the parking lot south of T-130C
165052	3-30-93	10 gallon	MATERIAL RELEASED: oil, mineral
			Workers testing a new heating system for the Sewage Treatment Plant upgrade project lost 10 gallons of new mineral oil through a vent. The oil was released to the soil.
168773	4-21-93	1 gallon	MATERIAL RELEASED: ethylene glycol
			A heater hose on a poartable generator near B-662 failed and released approximately 1 gallon of ethylene glycol and water mixture to the soil

NOTE 1 All releases reportable under 40 CFR 302.4.

NOTE 2 Assume antifreeze contains 50 % ethylene glycol and 50 % water. Prior to April 21, 1993, reportable quantity to National Response Center (NRC) for ethylene glycol was 1 pound; therefore, the reporting level for an antifreeze mixture was 2 pounds or approximately 1 quart. On April 21st, a continuous release report was filed with the NRC; thereafter, an ethylene glycol release is reportable to the NRC only if it exceeds the statistically significant increase (100 pounds of product or 200 pounds of mixture) as established in the Rocky Flats Plant continuous release report.

NOTE 3 Amounts listed in table are approximate estimates of quantity released.

CAUSE ANALYSIS

Cause Analysis seeks to identify the basic cause and effect relationship of a spill. The goal of the analysis is to prevent the possibility of future spills by eliminating the known causes of today's spills. The following is a rudimentary analysis of the 12-month period from July 1992 through June 1993. The purpose is to emphasize the weaknesses so that we can focus our collective attention on preventing future, similar incidents. It should be noted that a specific incident may have more than one root cause. In addition, a formal cause analysis is completed by the responsible Operations Manager for any release that is reportable to DOE, RFO.

<u>TYPE OF ERROR</u>	<u>NUMBER OF INCIDENTS</u>	<u>RELATIVE PERCENT</u>
<u>Personnel</u>	<u>36</u>	<u>14.5</u>
Procedure Not Followed	11	4.4
Training Deficiency	2	0.8
Lack of Attention	18	7.3
Programmatic Deficiency	3	1.2
Communication Deficiency	2	0.8
<u>Procedural</u>	<u>5</u>	<u>2.0</u>
Incomplete/Nonexistent	4	1.6
Incorrect Information	1	0.4
<u>Equipment</u>	<u>67</u>	<u>27.0</u>
<u>Design Deficiency</u>	<u>16</u>	<u>6.5</u>
Maintenance Deficiency	26	10.5
Premature Wearout	13	5.2
Installation/Mfg Deficiency	4	1.6
Other	8	3.2
<u>Privately Owned Vehicles</u>	<u>34</u>	<u>13.7</u>
<u>Not Investigated</u>	<u>106</u>	<u>42.8</u>

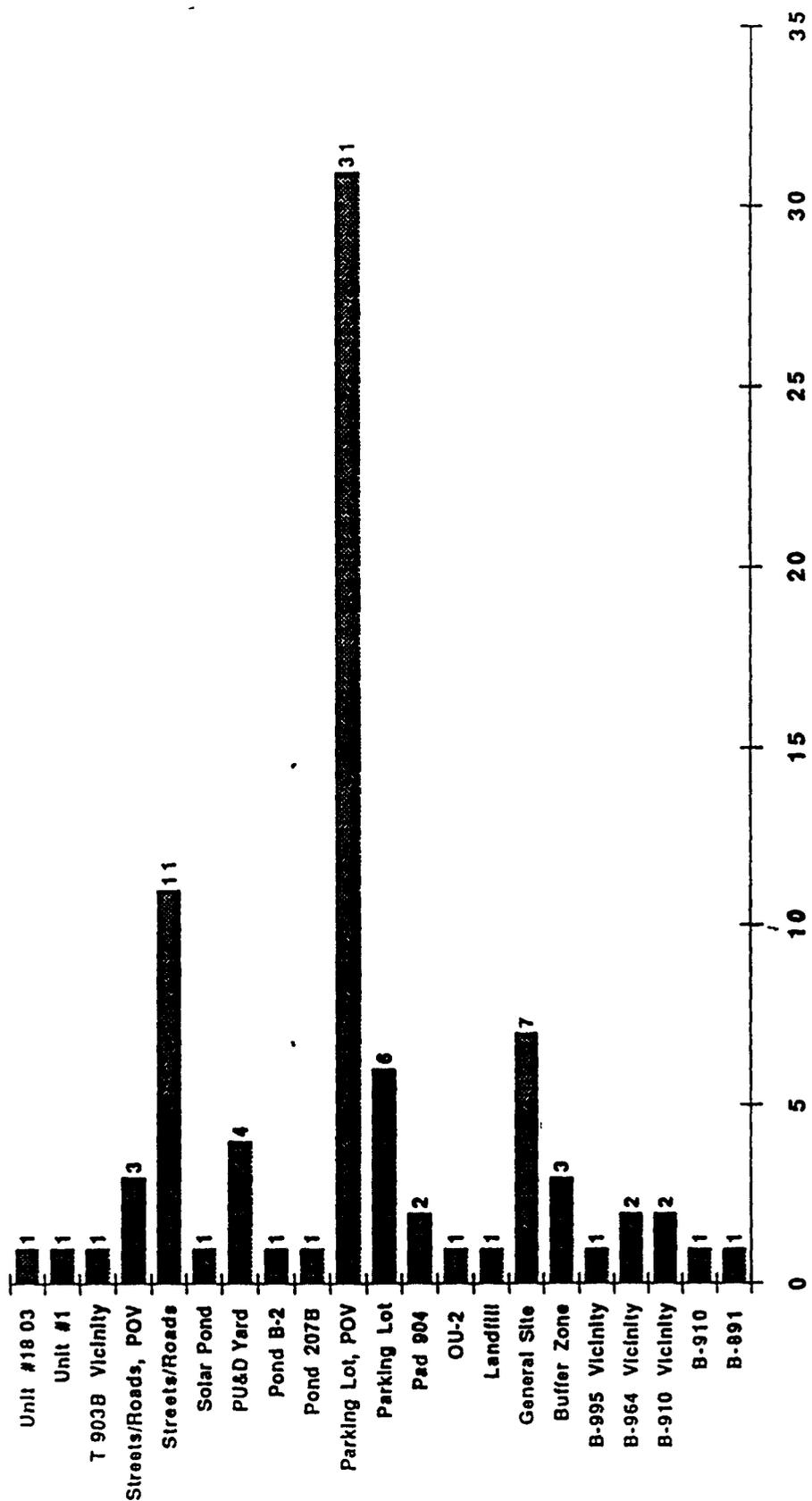
RELEASE GRAPHICS

RELEASES(1) OCCURRING INSIDE OR OUTSIDE BUILDINGS OR CONTAINMENT

- (1) Includes all reported releases greater than or equal to one pound (or one pint of aqueous liquids) of hazardous substances (i e , CERCLA hazardous substance, RCRA hazardous waste, SARA Title III extremely hazardous substance, DOT hazardous material, petroleum products, and nonhazardous substances (e g , water) contaminated by hazardous constituents).

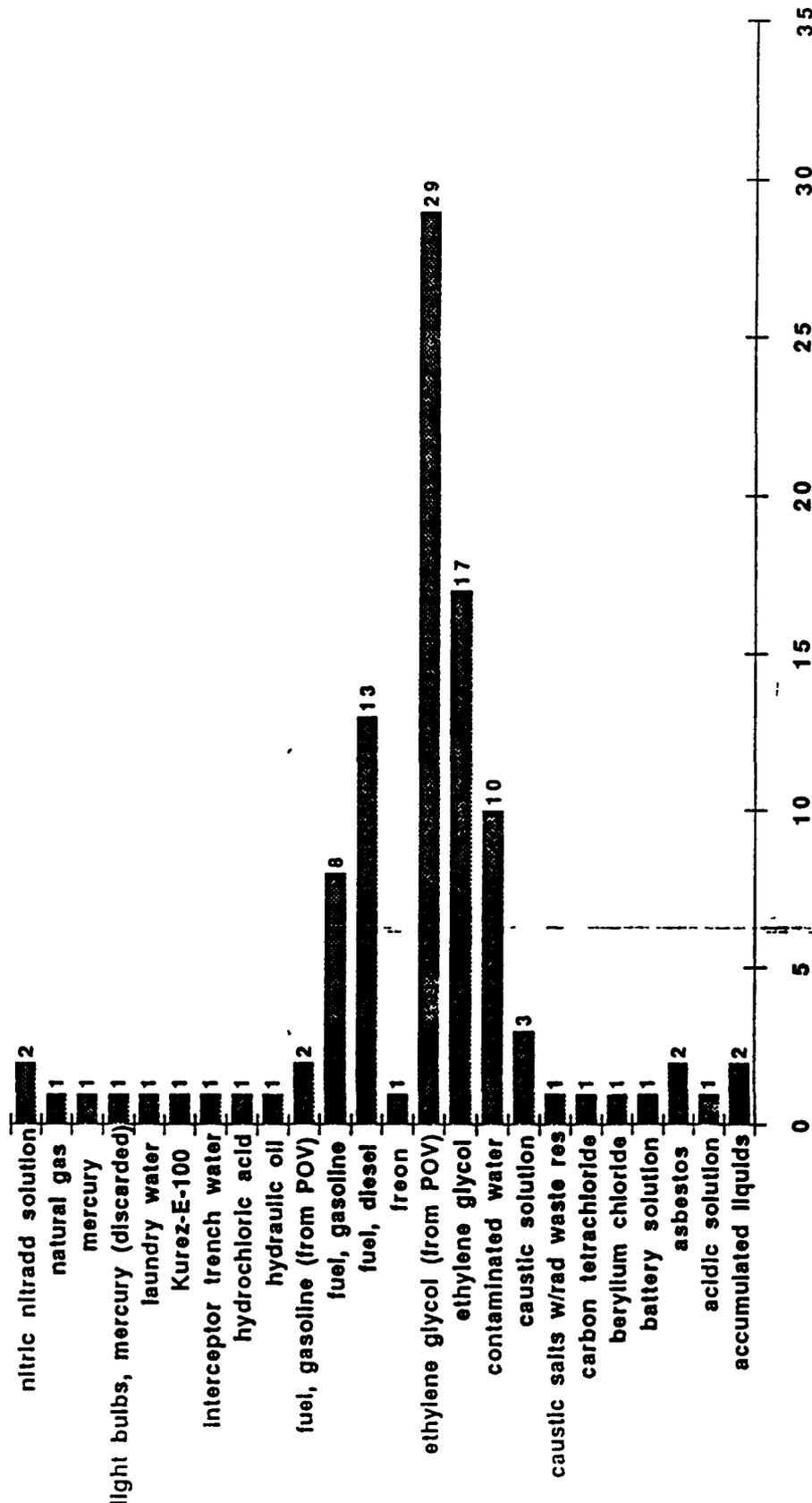
NOTE All reported mercury releases are included in data base including releases less than one pound

Inside and Outside Releases by Location



Number of Releases during July, 1992 through June, 1993

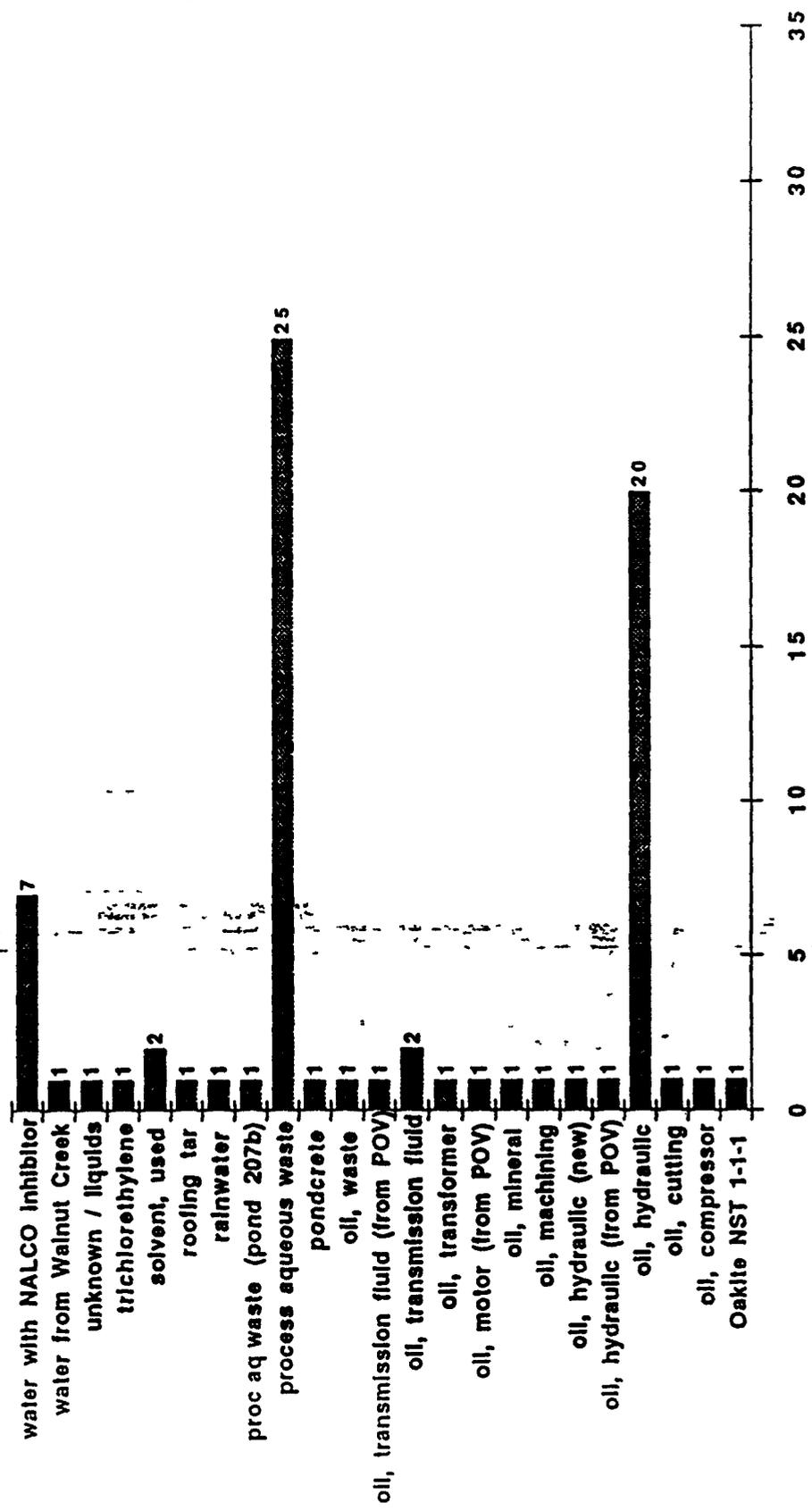
Inside and Outside Releases by Substance Type



Number of Releases during July, 1992 through June, 1993

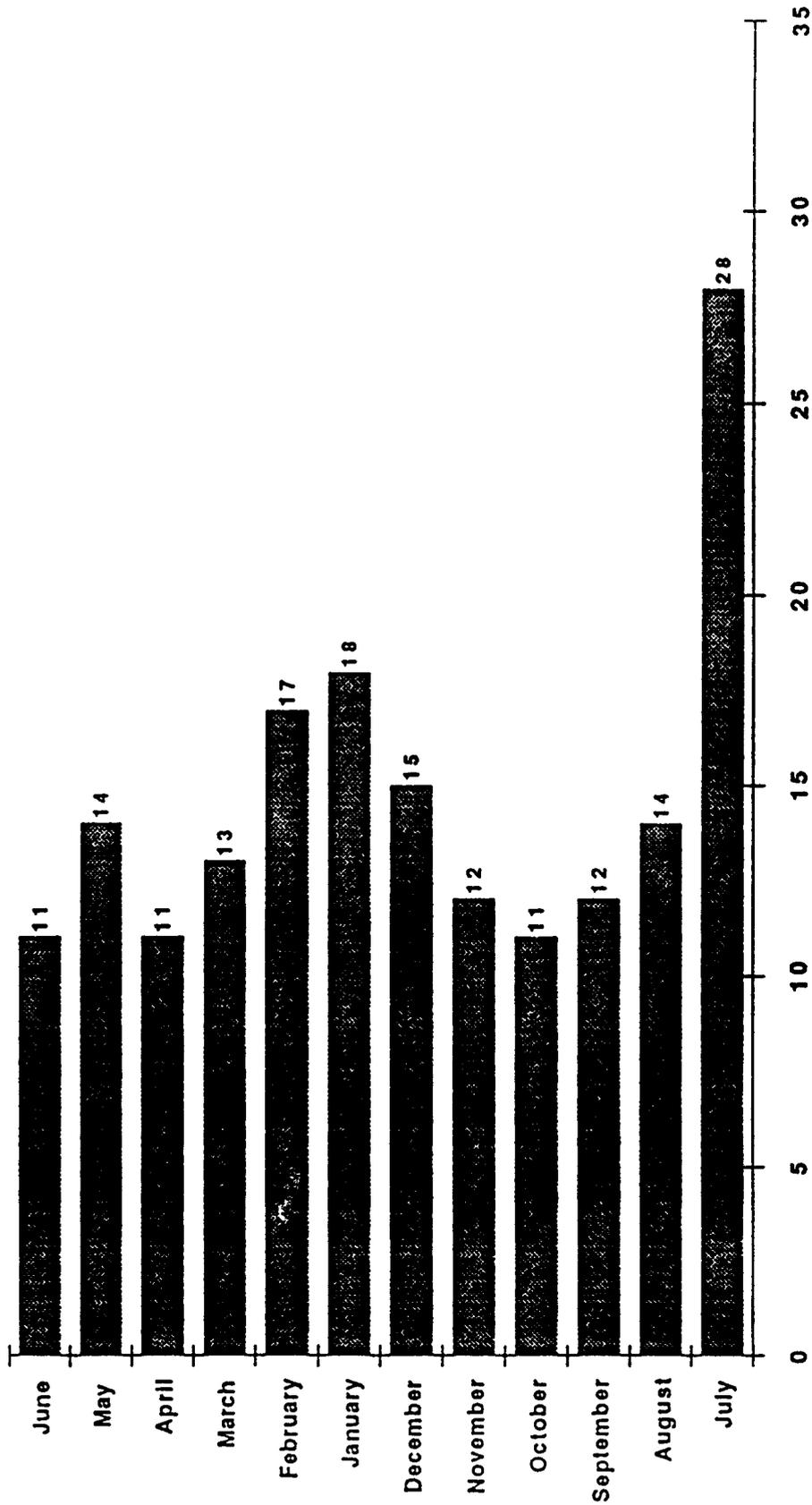
Inside and Outside Releases Include 34 Releases from POVs

Inside and Outside Releases by Substance Type



Number of Releases during July, 1992 through June, 1993

Inside and Outside Releases by Month



Number of Releases during July, 1992 through June, 1993

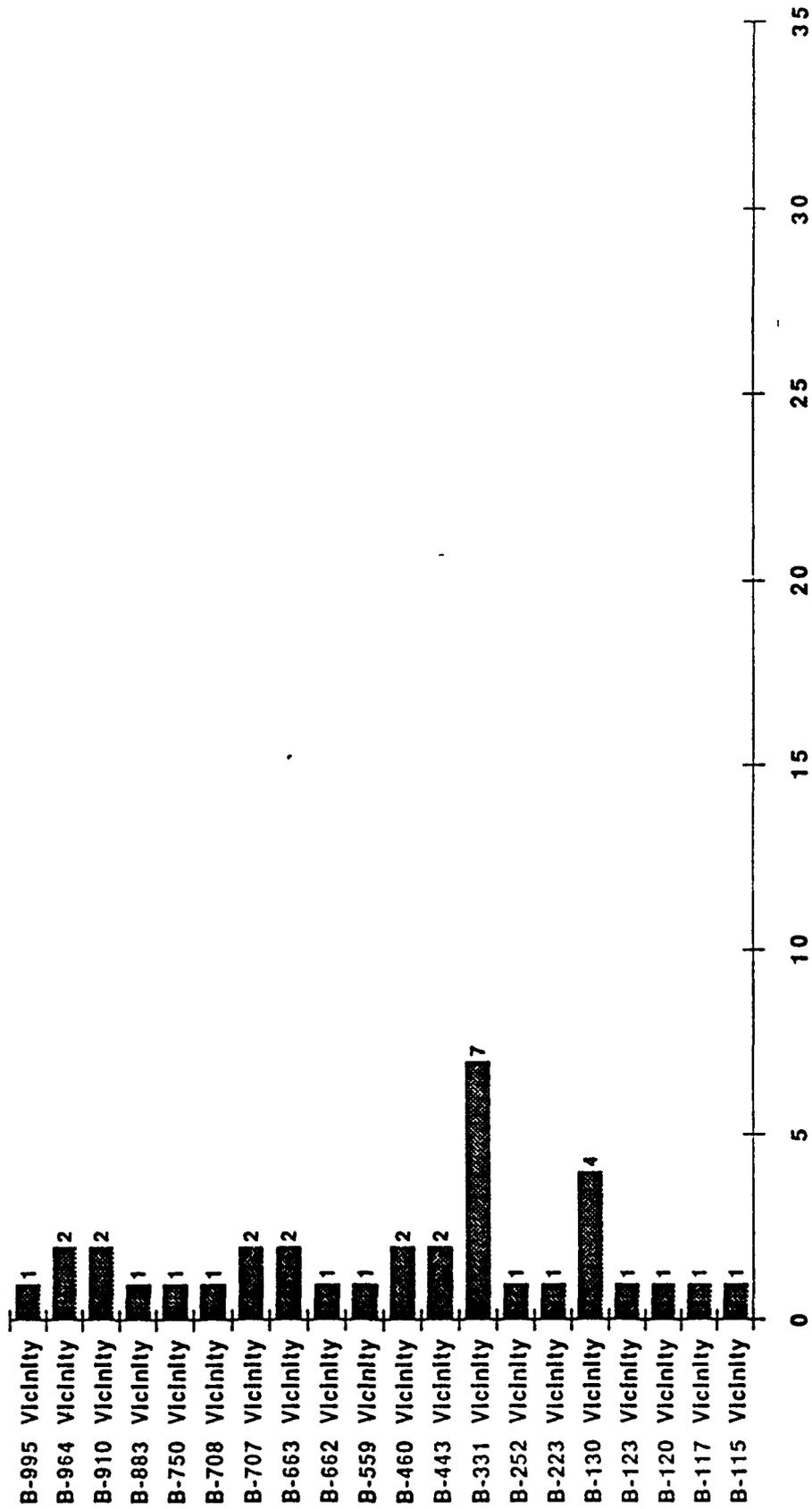
RELEASE GRAPHICS

RELEASES⁽¹⁾ OCCURRING OUTSIDE BUILDINGS OR CONTAINMENT ONLY

- (1) Includes all reported releases greater than or equal to one pound (or one pint of aqueous liquids) of hazardous substances (i.e., CERCLA hazardous substance, RCRA hazardous waste, SARA Title III extremely hazardous substance, DOT hazardous material, petroleum products, and nonhazardous substances (e.g., water) contaminated by hazardous constituents.

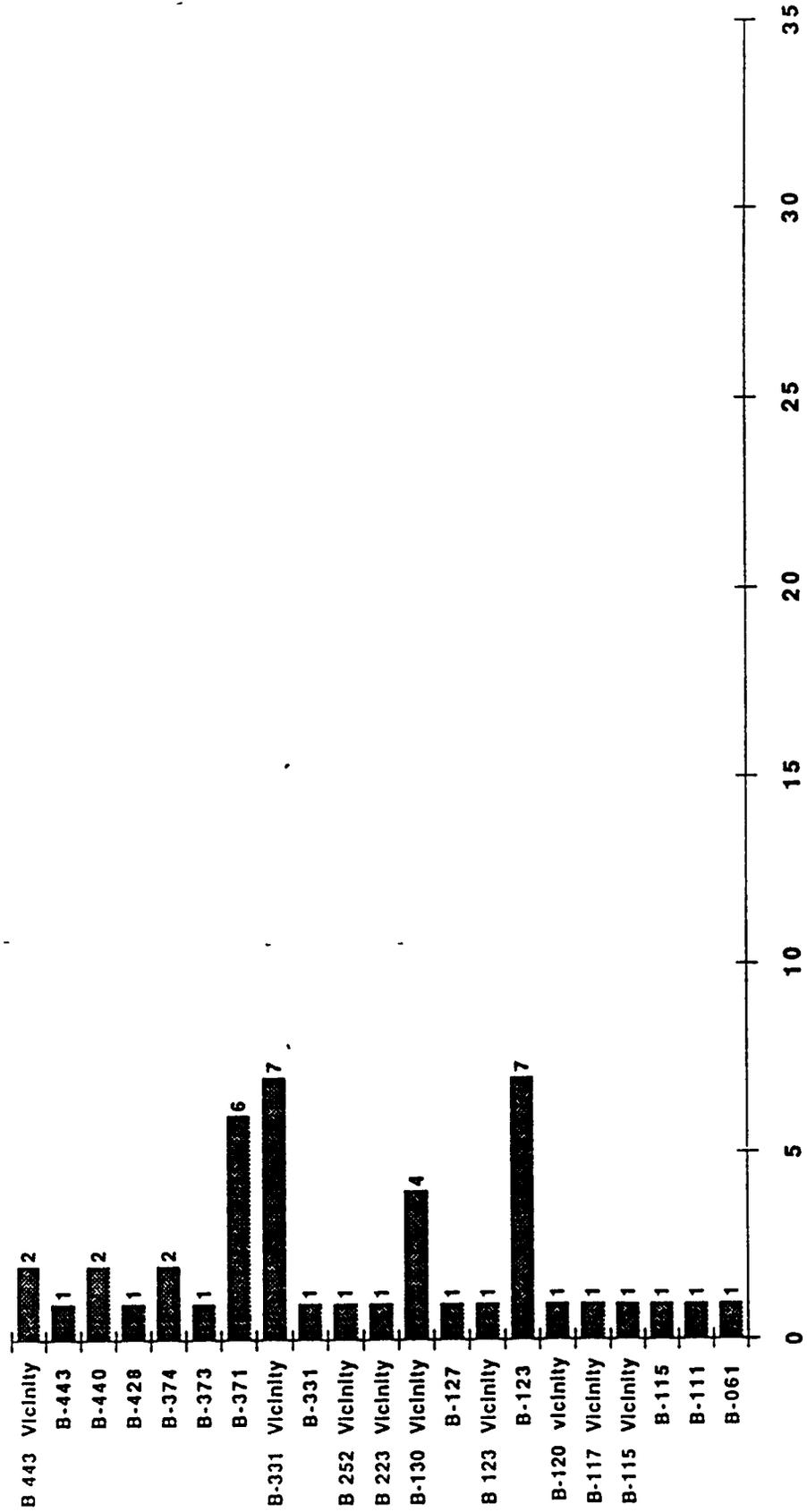
NOTE: All reported mercury releases are included in data base including releases less than one pound

Outside Only Releases by Location



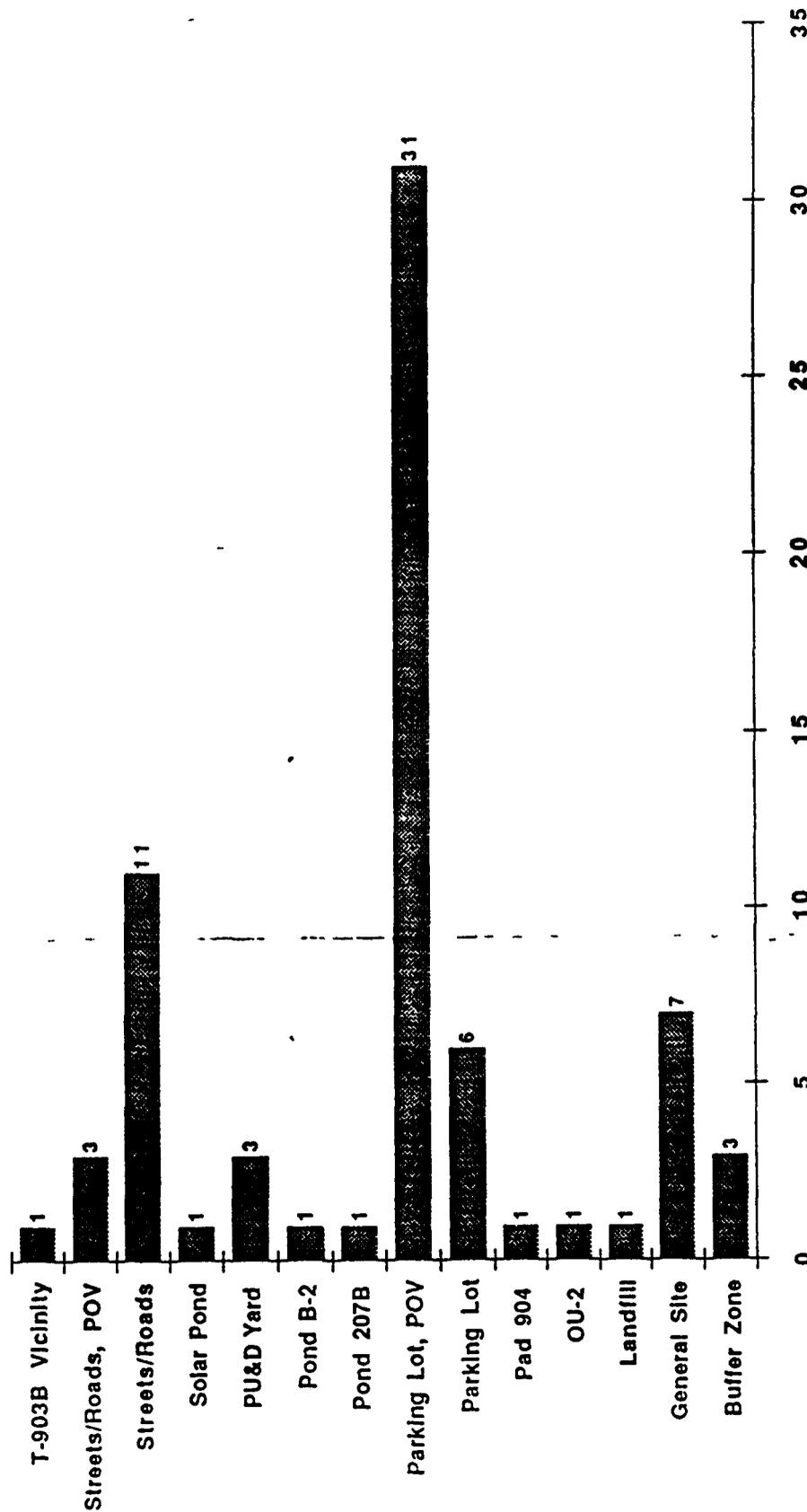
Number of Releases during July, 1992 through June, 1993

Inside and Outside Releases by Location



Number of Releases during July, 1992 through June, 1993

Outside Only Releases by Location

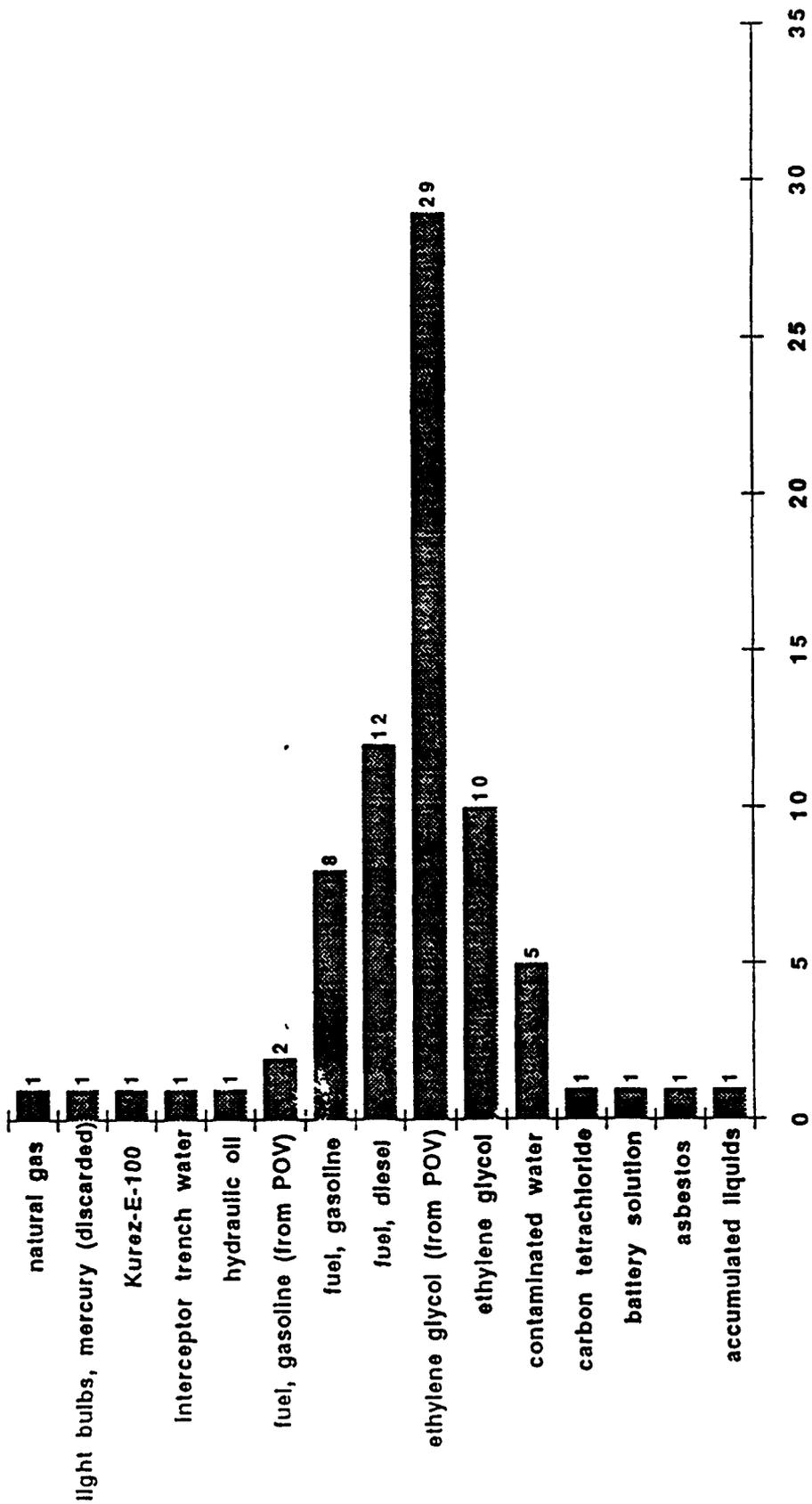


Number of Releases during July, 1992 through June, 1993

Outside Only Releases Include 34 Releases from POVs

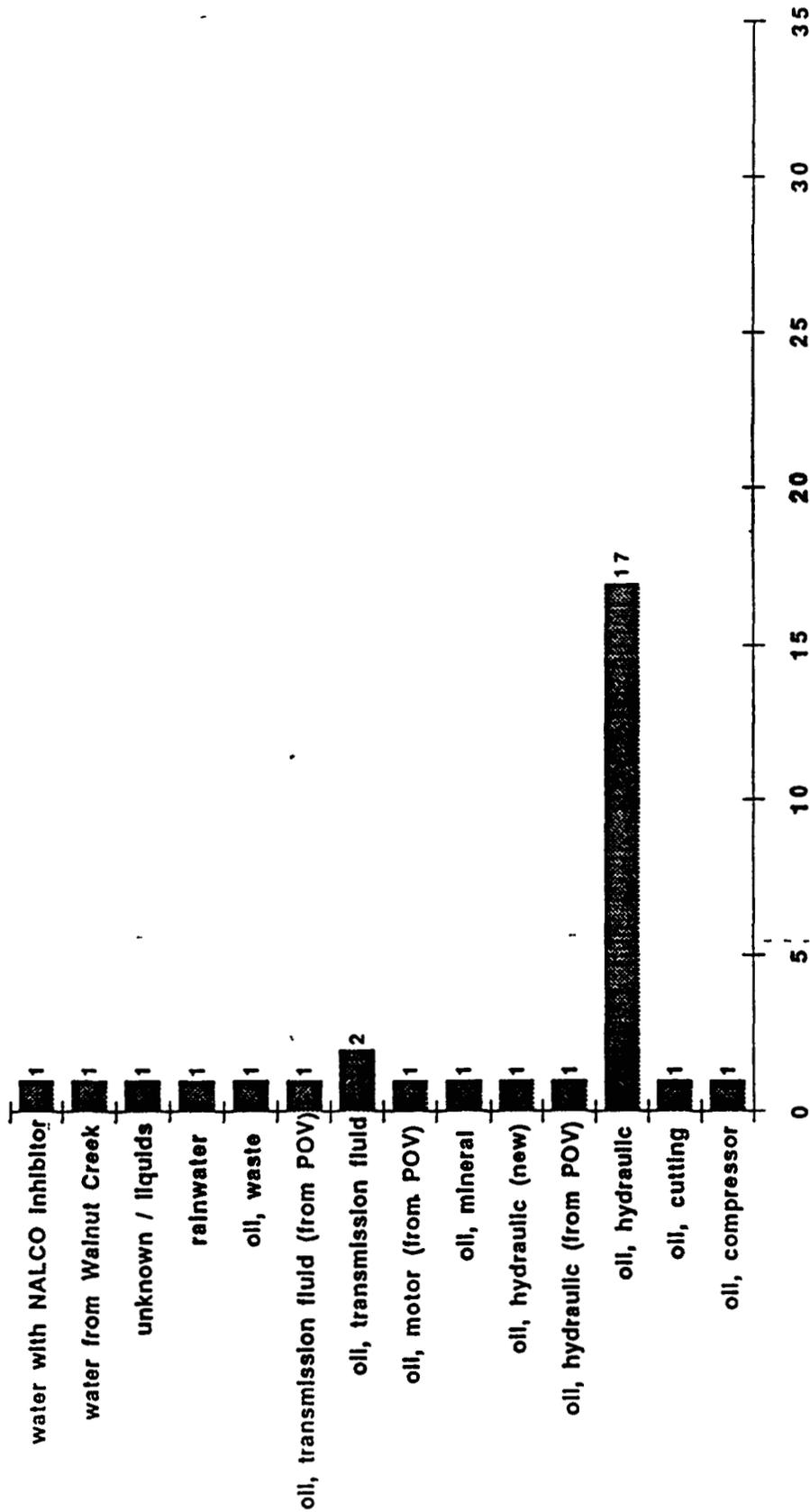
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Outside Only Releases by Substance Type



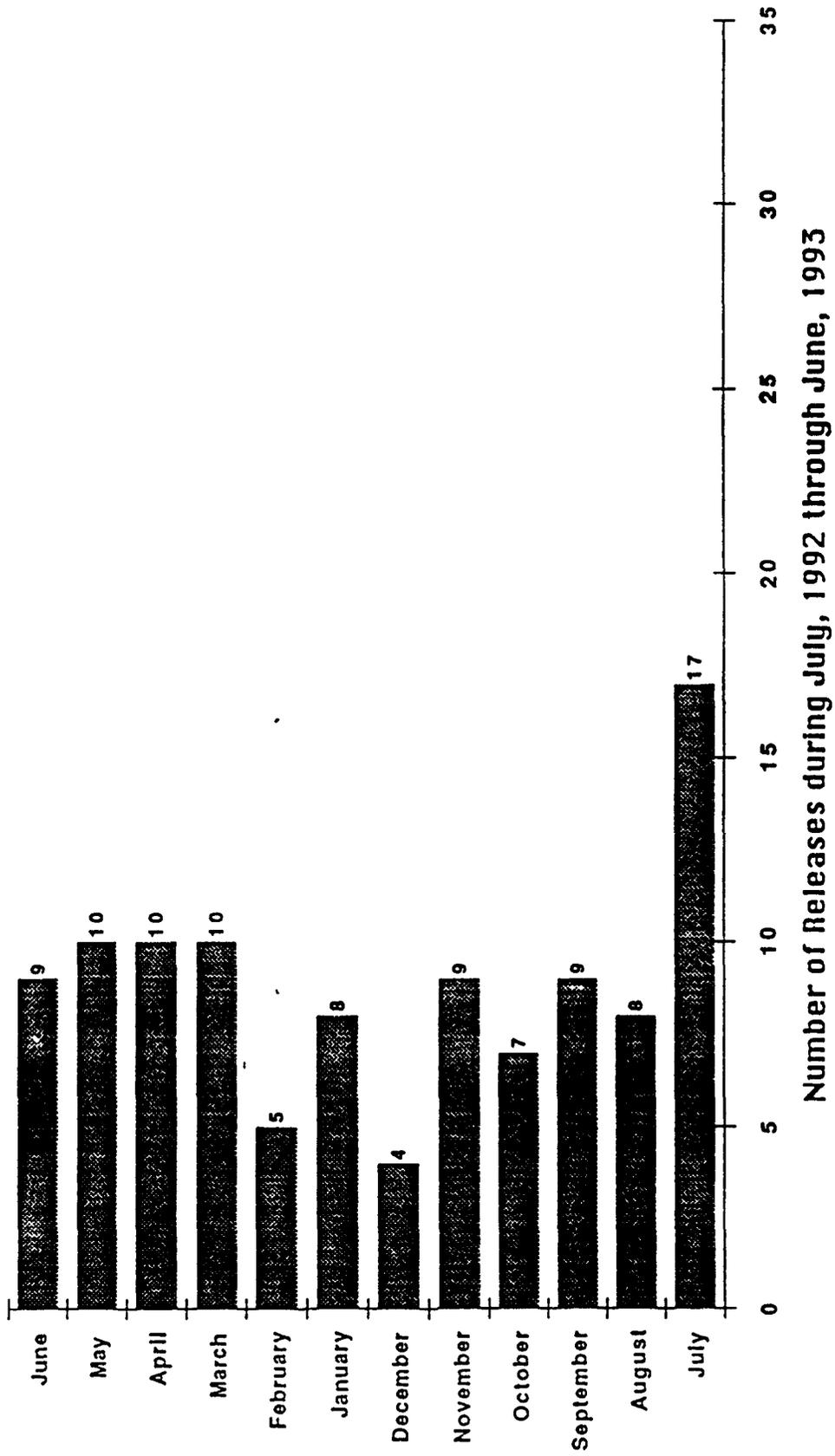
Number of Releases during July, 1992 through June, 1993

Outside Only Releases by Substance Type



Number of Releases during July, 1992 through June, 1993

Outside Only Releases by Month



Outside Only Releases Include 34 Releases from POVs

7/23/93

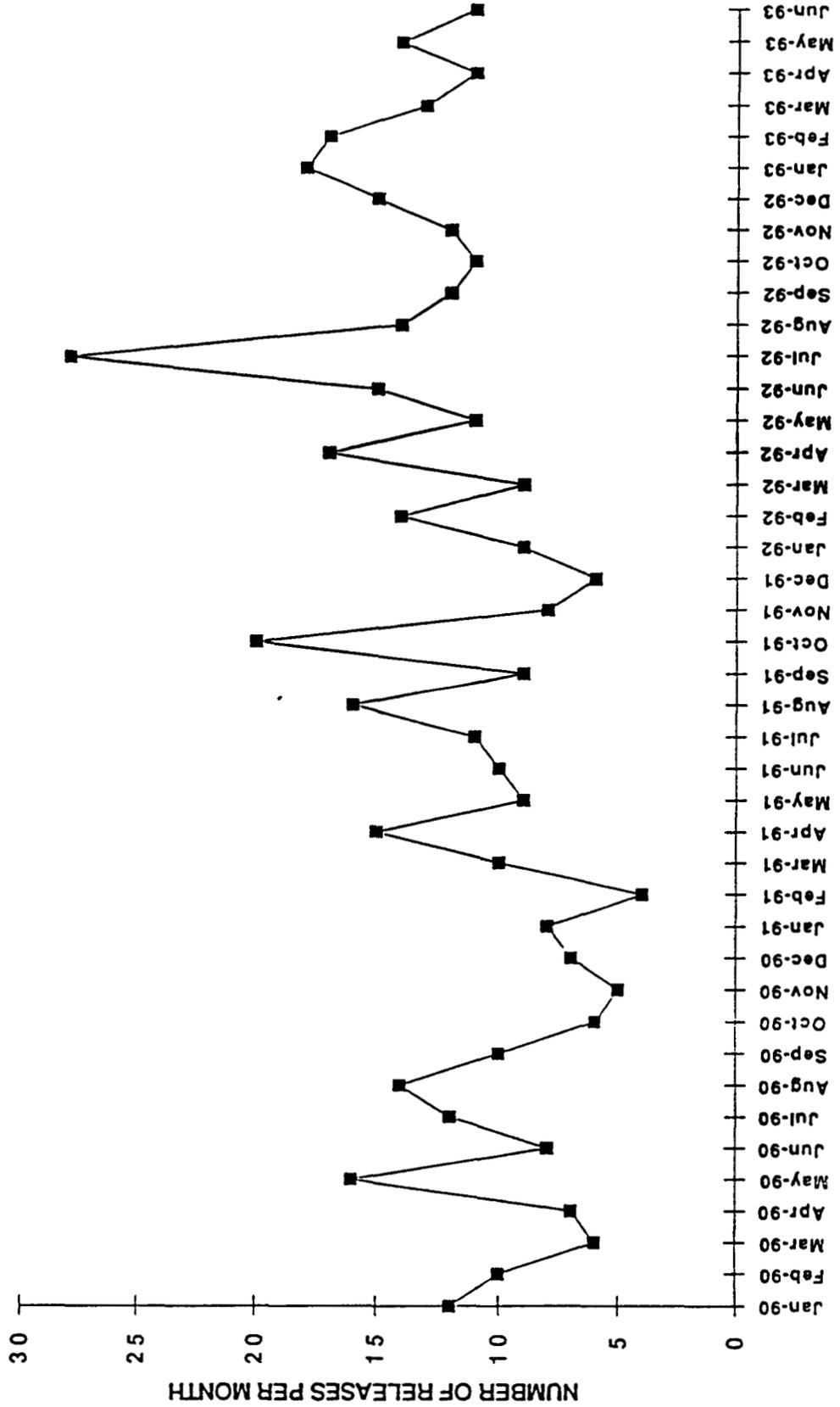
RELEASE GRAPHICS

**RELEASES(1) OCCURRING INSIDE OR OUTSIDE
BUILDINGS OR CONTAINMENT
ENCOMPASSING ALL AVAILABLE DATA
(JANUARY 1990 THROUGH JUNE 1993)**

- (1) Includes all reported releases greater than or equal to one pound (or one pint of aqueous liquids) of hazardous substances (i e , CERCLA hazardous substance, RCRA hazardous waste, SARA Title III extremely hazardous substance, DOT hazardous material, petroleum products, and nonhazardous substances (e g , water) contaminated by hazardous constituents)

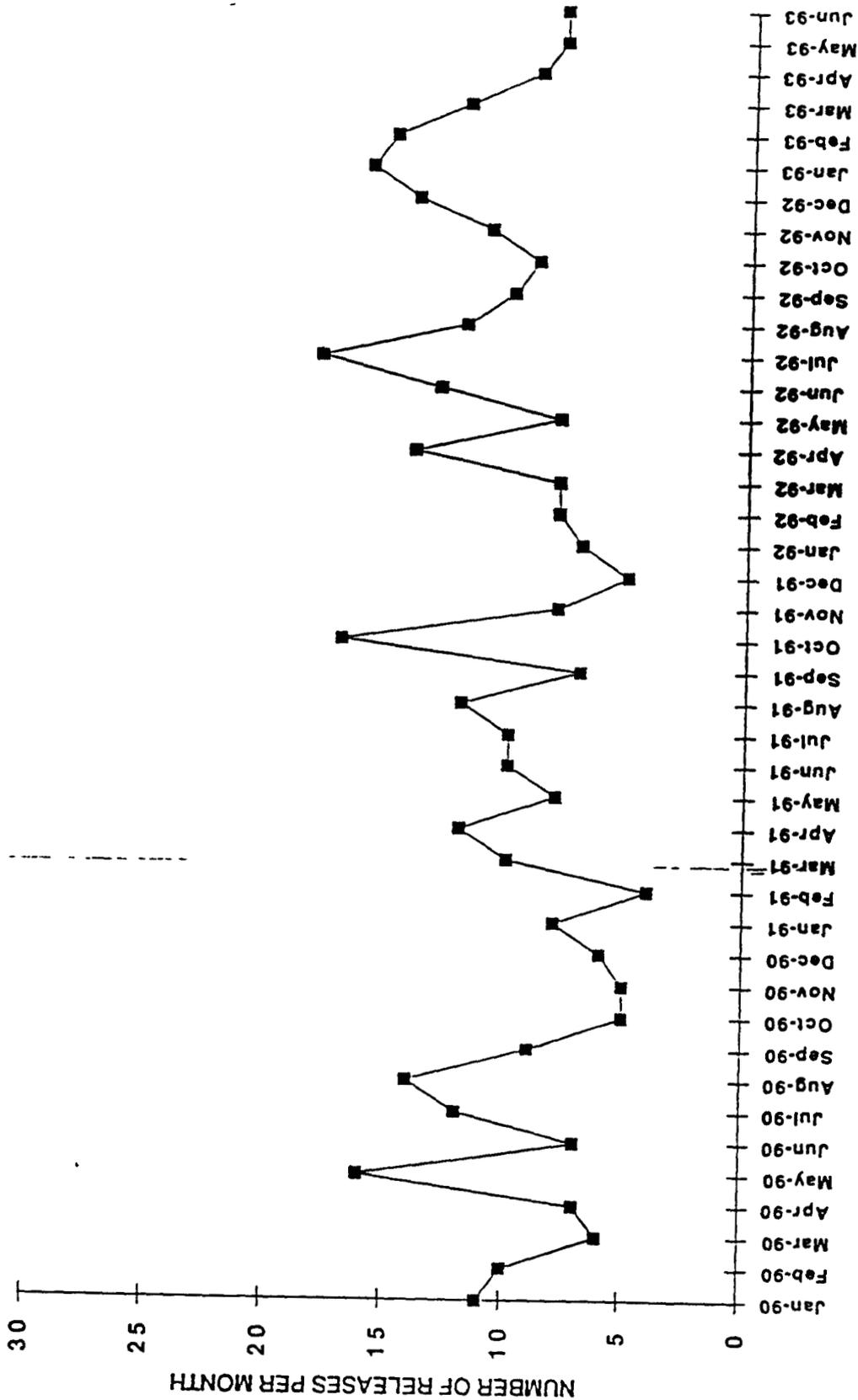
NOTE All reported mercury releases are included in data base including releases less than one pound

TOTAL RELEASES PER MONTH -1990,1991,1992,1993



7/28/93

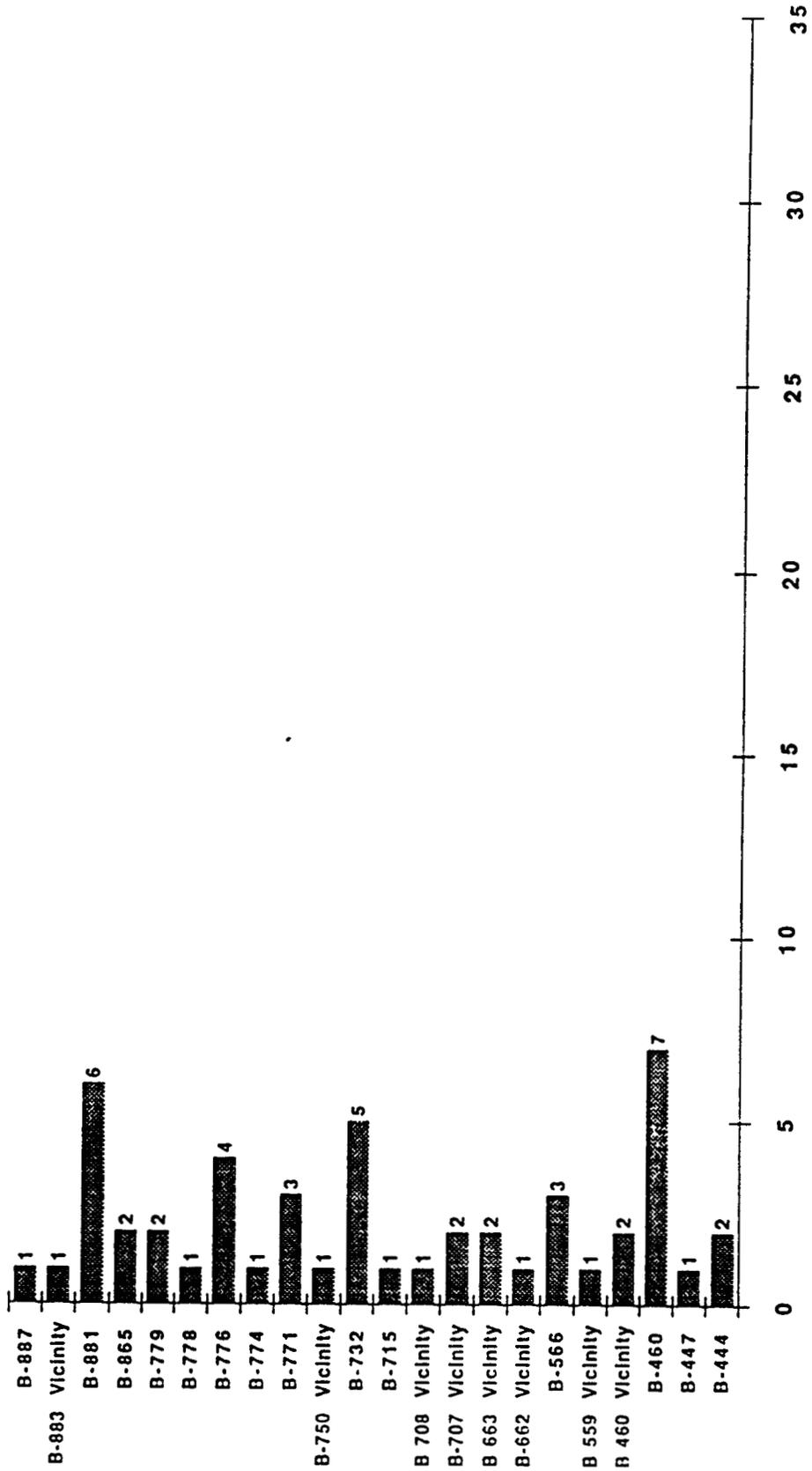
RELEASES EXCLUDING POVS -1990,1991,1992,1993



RELEASES FROM PRIVATELY OWNED VEHICLES (POVs) ARE NOT INCLUDED

7/28/93

Inside and Outside Releases by Location



Number of Releases during July, 1992 through June, 1993